

ABRIDGMENT OF THE REPORT

OF

THE COMMITTEE

APPOINTED BY



The Right Honourable the Governour of Bengal

FOR THE

ESTABLISHMENT OF A FEVER HOSPITAL,

AND FOR INQUIRING INTO

LOCAL MANAGEMENT AND TAXATION

IN CALCUTTA.

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In regard to Tanks, and receptacles for water, the result of the answers is, that out of many Tanks in almost every neighbourhood very few are kept clean; and that the rest, forming an immense majority, are foul and offensive; the stench of some of them being, in the words of one of the Respondents, "like that of a corrupted corpse"—that in some places there is not a single Reservoir of wholesome water in a neighbourhood; and that numerous filthy Ponds alone supply the poorer classes with water for culinary and other purposes.

The existence of numerous pools and holes, which receive ordure, and puddles which are receptacles of filth, and the sources of disease, are complained of in the majority of the localities from which answers have been obtained. The clustering of huts and houses, so that in spots densely inhabited there is no free circulation of air, is universally stated; and by several of the intelligent Native Respondents considered as a great source of unhealthiness.

Lieutenant Abercrombie says, that the formation of Tanks in the parts of the Town on the lowest horizontal level would turn filthy places into clean Tanks—that the present Tanks, in the Native parts of the Town, are small and extremely filthy—that the only broad Streets in the Native part of the Town, are Amherst Street and the Central Road; the former unfinished, and neither of them considerable thoroughfares—that the Chitpore Road is the great thoroughfare—that it is narrow, winding, dirty, and encroached upon—that the cross-ways are all Lanes very narrow, very filthy, and bounded generally by deep open ditches, the road being supported by perpendicular retaining walls—that Sobhabazar Street and Nimtollah, are the only two cross-streets which form an exception to the above—that they are both, however, bounded by deep ditches, and not above 25 feet in width—that none of the large open Drains are paved, and there are, of course, inequalities in their bottoms in which the water lodges; but it is so mixed up with black mud and filth, that these are the chief nuisance, and not the water itself—that the smaller Drains not being paved, it is impossible that they should always act or keep their level—that they are liable to be deepened too much in one place, and not enough in another—that coolies are continually employed in cutting here and there wherever considered necessary by the Overseers—that the Drains are not formed in a judicious and scientific manner—that the cuttings are merely temporary expedients, liable to be filled up next day with dirt—that there is a great deposit of wet filth during the rains—that in the dry weather, what falls or is thrown in hardens, and is not removed till it does so—that during the rains, the way the Drains are cleansed is by a bundle of straw twisted into hard ropes, six or nine inches diameter, and three or four feet long, dragged by ropes at each end by coolies, with great labour, along the bottom of the Drains—that it answers the temporary purpose, but that it is impossible to use it so often in each Drain as to keep it in any efficient state of cleanliness—that there is no such flow of water at present into the Drains, or such fall preserved in them, as to keep them in any tolerable state of cleanliness—that it is impossible to accomplish these objects without an entirely new construction of Drains—that the public convenience was never thought of in lining out the Streets and Lanes of the Native part of the Town—that the Streets are covered with dirt thrown out *ad libitum*, and the Drains frequently filled with filth from privies, in addition to other nuisances.

From Captain Thomson's evidence it appears, that there are several Drains the bottoms of which are nearly two feet below the outlet; and which must therefore be emptied by evaporation only—that they are not paved, nor have any fixed depth—and the coolies continue to dig them deeper every year—that he should say there was very little deposit of water in the Drains, considering the extent of them—that there is a deposit of filth in them to a very great extent—that there

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is a general deposit of five or six inches, which is carried off by the carts, principally decomposed animal and vegetable matter, the cleansing of the houses, &c. creating generally over the Native Town a very disagreeable stench at all times of the day, but particularly in the morning—that the carrying off the filth of privies, though very well managed considering the difficulties, and that the whole must be carried off by carts, is not so done as to prevent their being a nuisance—that the publick privies are a very great nuisance to the parts of the Town where they are—that there are an immense number of them—that none of the houses have a private one, unless sufficiently large to have a Compound and a Tank—that the present open Drains, and the covered ones, are intended to serve the purpose of Cleansing as well as Draining—that there are about 30 miles of Drains altogether; about 20 miles of them bricked—that the whole covered Drains would not exceed five miles of these 20—that four miles, perhaps, would be nearer the mark—that the covered Drains are quite ineffectual in respect of Cleansing—that the mode of cleansing the bottom of the Drains with twisted straw, mentioned by Mr. Abercrombie, is used wherever the deposit is liquid, but is interrupted every 20 or 30 feet by bridges, and is rendered very ineffectual for this reason—that they are obliged to let the mud and filth dry in order to remove it from beneath these bridges—that he does not believe one-tenth of the Drains have a sufficient fall to keep them clean—that in dry weather they have no flow of water in them whatever—that for one-half of the year they may have sufficient water in them to keep them moist, but they are then in a worse condition after occasional showers than after long continued dry weather—that it washes the dust off the road into them and makes mud of it—that in long dry weather they contract the dust which is blown about by the wind—that all the covered Drains are great nuisances.

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The following is the general description of the state of the Native part of the Town in regard to Cleansing and Drainage, given in Observations offered to your Committee at their request by Mr. John Phipps, “after a residence of upwards of forty years in Calcutta.” “In many parts of this City, and more especially in the most densely populated parts of it not intersected by Streets which can be traversed by the scavenger’s carts, the Drains, many of them merely irregular furrows in the soil without any brick-work, are continually left in a most filthy uncleaned state, emitting the most noisome effluvia, doubtless highly pernicious to the health of the inhabitants dwelling in such situations. Perhaps persons long inured to such nuisances become less susceptible of their pernicious effects than others would be. Such sinks of filth and consequent malaria are, I believe, but little, if at all, known to any scarcely but to those who occasionally pass by; but lying for the most part in obscure parts of the City, are not seen by the higher classes. I speak from experience in my perambulations to the abodes of many of the poor, as a visiting member of the District Charitable Society. Contiguous to my own dwelling there have long existed several cutcha Drains grievously offensive. There are many vacant premises in different parts of the City in ruins, choked with jungle, rank weeds, and filth deposited by Natives; there are also several dirty Tanks in different quarters, which are also great nuisances from not being cleaned out. The Mehter’s tatties [i. e. publick necessaries] are likewise an abominable nuisance.”

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Two of the members of the Second Sub-Committee, Sir John Grant and Rustmjee Cowasjee, Esq. personally inspected the greater part of the Roads and Lanes in the Native part of the Town, and on the 19th of November 1836, they gave the following evidence to the Sub-Committee:—

“We have passed through the greater part of the Roads and Lanes in the Native part of the Town, bounded by Loll Bazar, Clive Street, Mutchooa Bazar,

INTRODUCTION.

ON the 9th April 1835, J. R. Martin, Esq. Surgeon to the Native Hospital, addressed a Letter to the Governours of that Institution, pointing out the urgent necessity for establishing a Fever Hospital in the Town of Calcutta, accompanied by a very able note on the Medical Topography of Calcutta and its Suburbs.

The Governours lost no time in giving their attention to the important and interesting subjects suggested to them. They came to certain resolutions, which they communicated to Government; the Honourable Sir C. T. Metcalfe, Baronet, being the then Governour General of India.

A meeting of the inhabitants was called by publick advertisement, which was very respectably attended, on the 18th June 1835, and at which a considerable sum was subscribed towards the erection and maintenance of the Hospital proposed.

A second publick meeting was held on the 12th August 1835, and further steps taken to procure subscriptions; and at the date of the Report of the Committee, these amounted to Co.'s Rs. 47,713:7:5.

In 1836, the Earl of Auckland having succeeded to the Government of India, His Lordship recommended a Committee to be formed, which was accordingly done by the authority of the Government.

The object contemplated by the Governours of the Native Hospital were twofold.

First, to establish an Hospital for the treatment of Medical cases, to which His Lordship suggested the addition of Dispensaries to be attached to it.

Secondly, to submit to the consideration of Government the Sanitary State of Calcutta and its Suburbs, and the suggestion of local improvements for the purpose of producing and maintaining greater salubrity, of both which objects also His Lordship most cordially approved—but to these two objects he suggested the addition of a third, the framing a Plan of local management and taxation.

The Committee, therefore, divided itself into Three Sub-Committees—The First, to inquire into the present system of assessing, collecting, and appropriating the Town taxes—the Second, to inquire into the present state and management of what is here called the Conservancy Department, that is, the drainage, cleansing, &c. of the Town, in other words its state in regard to salubrity and means of improving it—and the Third, to conduct all measures connected with the proposed Fever Hospital and the circulation of subscription books, &c.

After a minute, careful, and somewhat tedious investigation of the matters referred to them, the Committee agreed upon a Report embracing the results of the inquiries of the Three Sub-Committees, which they submitted to the Government of Bengal, under date the 7th January 1840.

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From the course the Committee thought it right to adopt, their Report was very long, and embraced a variety of matters little connected with each other.

It is thought of importance at the present moment to select in a somewhat abridged form, but in the words of the Report itself, that part of it which was framed by the Second Sub-Committee, and which relates to the Salubrity of the City, omitting only parts of the evidence which appear repetitions.

Abridged Extract from the Report of the Committee for the Establishment of a Fever Hospital, and for inquiring into local management and taxation in Calcutta.

Your Committee think it most in order to direct your Honour's attention in the first place to the result of their inquiries relating to the state of the **DRAINAGE, CLEANSING, and VENTILATION** of the City, and its **SUPPLY OF WATER**, and the means of improving them; upon which, as upon its main foundation, the salubrity of the City must rest.

Considering the apparent equality of level of the vast plain on which the City stands, and its naturally marshy position, your Committee thought it necessary to commence by ascertaining the practicability of establishing an effectual system of Drainage and Cleansing; since, if this could not be done, their time would be thrown away in searching after means to do more than alleviate the evil to the greatest extent which should appear possible. They accordingly commenced their inquiries by the examination of the practical Engineer Officers, the best acquainted with the locality, and whose attention had been directed to it the most particularly with a view to these objects; and they have the satisfaction now to report with perfect confidence, from the information and opinions they have thus obtained, that there is no natural obstruction whatsoever to the establishment in the City of Calcutta of a system of Drainage and Cleansing adequate to the rendering it dry and free from soil and impurities.

A table of Levels was furnished to your Committee by Lieut. Abercrombie, taken from Surveys made by Officers employed by the Lottery Committee, and by Government—Major Schalch, Major Taylor, Captain Prinsep, and Captain Forbes, including some by Mr. Blechynden, a copy of which is inserted in the Appendix.

It is from these Surveys, the accuracy of which is admitted, that the statements made by the Engineer Officers examined are taken.

Taking it therefore to be sufficiently established, that there is no natural obstacle to the thorough Drainage and Cleansing of the City, your Committee will proceed to state the result of the evidence they have obtained as to the present actual state of the City in these respects, and in regard to Ventilation, and the supply of Water.

Upon this subject connected with others they drew up several queries, which they sent to such persons, resident in the Town, as were considered likely to furnish them with the information required, regarding their several neighbourhoods respectively.

From all the answers which they received, it appears that the state of the Drains is the subject of general complaint. They are represented generally to be in the most offensive state in the Native part of the Town, in consequence of all sorts of dirt and filth that are thrown into them; and there does not appear to be any contradiction to this statement in any of the answers.

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and College Street. Setting out from Tank Square, we passed through Old China Bazar, passed the Armenian Church up to Burra Bazar, through all the windings of which we passed as far as the Mint: from thence to the Portuguese Church, Moorgheehatah, along the Chitpore Road to Mutchooa Bazar, and back through Colootollah Road. Through several of the Lanes and Alleys we could not pass, the same not being wide enough for the admission of any wheeled carriage or cart. The whole of this space, with the exception of some places near College Street, is most thickly inhabited; the houses and shops adjoin; and though not lofty, are sufficiently high to exclude sun and air; the free circulation of the latter of which is effectually prevented by the extreme narrowness, sharp angles, and perpetual tortuosities of the Streets; few Streets being more than a quarter of a mile in length in the same direction, and many not so much; none of the Streets, except those to be presently mentioned, much exceeding twelve feet between the front walls of the opposite houses, many being much narrower; and of this space from one foot, to one and a half foot in width, being occupied by a kennel on each side. These kennels are apparently two or two and a half feet deep, with brick sides, the bottoms filled with perfectly stagnant water and filth; and the tops covered, at distances of from one foot to two feet and two and a half feet apart, with buildings from six to ten feet in length, which in a few places are the entrances to houses; but which in all other instances are the supports of the platforms used as shops; which platforms are erected immediately over the kennel, from one foot to three feet above it, the space between the bridge and the platform being closed to the front; so that no part of the kennel is accessible for the purpose of cleansing it but the above mentioned intervals of one, two, or two and a half feet in length, at various distances, of not less than six, or more than ten feet from each other; while the whole stench freely escapes into the streets and houses.

Mr. Rustomjee Cowasjee adds, that he has frequently seen the part of the Town above described during the rains, and that after an ordinary fall of rain, the kennels, having no outlet, overflow, and cause the water to cover the Streets to the depth of one foot or more—and that it sometimes takes a whole day to run off, seldom less than eight hours, during which there is no passage but through this water; and the houses, (of which there are many) which are a few inches lower than the road, or street, have the lower part overflowed, and rendered uninhabitable.

The space above described is the most populous part of Calcutta, and forms the “chief seat of its wealth, and place of the residence of all the Native Bankers, Merchants, and Tradesmen of Calcutta.”

Having completed their Survey of the Native parts of the Town, the above two members, on the 24th of December 1836, made the following addition to their evidence upon the subject:—

“We again visited the Native parts of the Town, but have nothing new to add to what has been described by us in our former evidence, recorded in the Proceedings of the 9th of November last, except that in some places which we visited there were nuisances of a worse description; and such encroachments on the publick Roads as to obstruct the passage of carriages, which the Magistrates appeared to take no notice of.”

From the evidence of Mr. Ryper, Apothecary at Gurranhatta Dispensary, it appears that he attributes the bowel complaints and dysentery—some of the most usual diseases of the Native part of the Town, generally to the living in a damp house and eating unwholesome food—that the dampness of the houses proceeds from the marshy ground on which they stand—that this applies generally to the Native Town—that the situation of the Native houses is likely to

produce these fatal complaints of the bowels—that the want of Drainage has a considerable effect upon the amount of disease in the Native part of Calcutta—that he thinks the Native part of Calcutta less healthy than Towns in other parts of Bengal—and that this greater unhealthiness is produced by the want of carrying away the filth.

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Mr. Brett, Surgeon to the Governour General's Body Guard, remarks a decided difference in the healthiness of the Sepoys serving in the Western Provinces, and of the Body Guard who come from the same Provinces stationed here; which he attributes partly to the general circumstances of the climate of Bengal, and partly to the want of good Drainage, and to stagnant Pools, and the quantity of miasma created by these causes. He thinks these causes prevail with great intensity in Ballygunge and Calcutta. Of 401 Medical cases which occurred within the period of two months at his Hospital, a Charitable Institution which he had lately established in Calcutta, dysenteries, remittent and intermittent fevers, affections of the spleen, and rheumatick attacks, constituted 266, which would be greatly diminished by good Drainage and Ventilation. He says, that during two months since the establishment of his Hospital, of which he had already given in to the Committee a description and account, he had pretty generally visited, either personally or through his Native doctors, those whom he could not receive into the Hospital, and whose cases were serious—that he had thus been acquainted with the situation and circumstances in respect to salubrity of the habitations of many of the Native inhabitants of the labouring classes in about the centre of the Native Town—that he observed universally a want of Cleanliness, Drainage, and Ventilation in a great and remarkable degree—that the necessary consequence was the fevers and other complaints which he had mentioned—that he thought the prevalence of fevers and other disorders he had described was much greater generally all over Calcutta than that of typhus or typhoid fever in the most unhealthy part of Westminster—that when he was attached to St. George's Infirmary, London, it was his duty for two years to attend the sick at their own houses in some of the most unhealthy parts of St. George's Parish, St. Giles, Pancras, and Marylebone—that the diseases were more fatal, but their number not so great as they are generally all over the Native Town of Calcutta at the healthiest time of the year—that he attributed the excessive prevalence of disease in the Native part of Calcutta partly to the general effect of the climate, but in a much greater degree to the want of Drainage, Ventilation, and the Cleansing away of the filth from the houses—that the prevalence of disease amongst the lower orders is very striking to an European Medical man in all great Cities in India, but much more so in Calcutta—that he attributed this to the climate generally, in part, but in a greater measure to the local circumstances; the want of Drainage, Ventilation and Cleansing, to which the natural dampness of the climate gave additional effect—that he might illustrate the effects in the climate of Bengal of Drainage, and Ventilation, and Cleansing, by reference to the Garrison of Fort William—that there is the strictest attention there to those points, and to the removal of all exuberant vegetation—that the consequence is, that the general health of the Native camp followers in the Fort is remarkably good—that he does not think the Sepoys afford a good ground of comparison with the Native population of Calcutta, they being Up-country men, of good constitution, and well provided with every comfort—that he spoke from the experience of five months, during the most unhealthy season of the year—that he had charge of all the Native establishments of the Fort—that the number of diseases during that time was very small; indeed very few remittent fevers, or dysenteries, or cases of spleen, or any diseases—that he attributed the difference to the difference in Drainage, Ventilation, and Cleansing.

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Modoosoodun Goopto Kobeeruttan, who had practised medicine in Calcutta for 12 years among the Native population, and was educated in the Sanskrit and English College for six years, and was afterwards Professor of Sanskrit Medicine there, having been assistant to Dr. Tytler and Dr. Grant for the last two years, during which he attended their Lectures upon Anatomy and the Theory and Practice of Medicine and Surgery, stated, that his practice had been among the respectable, the middle, and the poorer classes of Natives, most among the middle classes,—that he had seen a great deal of the diseases of the lower classes—that he thought he could give the Committee a pretty accurate and full account of the diseases prevalent among the Natives in Calcutta—that fevers are the most prevalent diseases; bilious, remittent, and intermittent—that enlargement of the spleen is the general termination of the two last descriptions of fever—that diarrhœa, dysentery, dyspepsia, rheumatism, and venereal disease are the most prevalent diseases in the Town, among the Native population—that there are very few inflammatory diseases—that the fevers, except the intermittent, are dangerous to life, and certain to be fatal if not attended to medically—that the intermittent Fever, unless it produces diarrhœa, does not produce an enlargement of the spleen; but if it is attended with diarrhœa, it almost always produces an enlargement of the spleen—that the diarrhœa following intermittent fever, is generally fatal, if not medically attended to—that the enlargement of the spleen is not generally fatal of itself; but if not cured produces dyspepsia, œdematous swellings of the legs, and hands, and loins, and anasarcha, which are fatal—that dysentery is always dangerous, and if not medically attended to in time always fatal—that *nearly two-thirds of the Native population in the Town have dyspepsia*—that it is not of itself fatal, but produces debility, which predisposes to other diseases, diarrhœa, dysentery, and piles—that rheumatism is very frequent—that it often arrives at a height among the labouring classes to prevent their obtaining their bread—that the children of the Hindoo inhabitants of Bengal are generally weakly, and that they are subject to several diseases; hooping cough, which he considers in this country not an infectious disease, dyspepsia, diarrhœa, dysentery, and all the fevers before mentioned—that *he does not see in the Town of Calcutta, any children that are in perfect health*. He says that the treatment of the mother and the child at and just after the time of its birth injures the constitution of the child materially. But, being asked generally upon a subsequent examination to what he attributed the prevalence of the diseases he had mentioned, he replied “to the narrowness of the Streets, and the Canals being full of putrefied vegetable and animal matter”—that the Drains are generally offensive in Calcutta, particularly in Burra Bazar, Mutchooa Bazar, Colootolah, and Jorasanko—that he observes a very great difference in the health of the inhabitants in different parts of the Town—that the places above mentioned are the most unhealthy—that he reckons Baug Bazar, Bar Simlah, and Shaum Bazar the most healthy parts of the Town for Native inhabitants—that he attributes the greater degree of salubrity of these places to their being very thinly inhabited, the Roads being broad, and the Tanks good. Being asked whether he would attribute the prevalence of the diseases he had mentioned more to the Water, to the want of Ventilation, or the want of Drainage, he said that all were injurious; the Water most so, the want of Ventilation next, then the Drainage—that the Natives are accustomed to live crowded, and therefore do not suffer so much from want of air—that the houses of the Natives are generally in damp situations—that he attributes much of their diseases to that cause, intermittent fever and rheumatism—that, from his observation of the state of health in the most healthy parts of Calcutta, he had no doubt that, if proper Ventilation, proper Drainage, and a supply of wholesome Water were provided, Calcutta might be rendered a healthy place—that he

thought that the circumstances he had mentioned contributed to produce cholera—that there are many small private Tanks which contain bad water and produce miasmata, and many old Tanks filled up with filth, which causes a bad smell for four or five months, and is injurious to the health of the neighbourhood—that he considers the dust injurious to health—that it produces cough and ophthalmia—that there is much ophthalmia in the hot season from the dust—that the publick privies are not properly cleaned—that there are many of them, and that this is injurious to the comfort and salubrity of the Town.

Upon this statement your Committee would remark, that, although this very intelligent witness, in the order in which he classes the circumstances to which he would attribute the prevalence of the diseases he had mentioned, places the Water first, as the most injurious to the health of the inhabitants, the want of Ventilation next, and the want of Drainage last—it must not be taken as his opinion that the want of Drainage is less injurious to the Native constitution than the want of Ventilation; for he immediately adds, that they do not suffer so much from want of air, owing to their being accustomed to live crowded; and the whole evidence taken by your Committee goes to prove, that, next to the unwholesomeness of the Water, the greatest cause of the insalubrity of Calcutta is the want of Drainage.

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Mr. J. R. Martin, Surgeon to the Native Hospital, said that he had perused the evidence of Modoosoodun, the last witness—that he concurred in his opinion as to the nature and extent of the diseases—that he believed, however, he had underrated the prevalence of fever, and its sequela: spleen and diarrhoea, which carry off more Natives than any other diseases—that the dyspeptick complaints of which he spoke he, Mr. Martin, knew to be very general. Being asked if he had any further observations to make with regard to the salubrity of Calcutta, he said that he should hand in his Report in a few days. This was accordingly done in a printed form, and your Committee will presently call your Honour's attention to it.

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The above mentioned respectable witness, Modoosoodun Goopto, being subsequently examined by the First Sub-Committee as to the prevalence of disease, stated, that the most unhealthy season of the year was from August to November—that during these months the people suffer under intermittent, remittent, and bilious fevers, and dysentery and cholera—that the number of people whom he supposed to suffer from those diseases at that season amounted to about 500 in each Thannah, including Bengallees, Mahomedans, Up-country people, and East Indians. It being remarked to him that that would be upwards of 18,000 people, he answered, “Yes,” but that in some Thannahs there were less, in others more; but the average would amount to the number above stated, and that the greater part of them were severely affected. And, it being directly put to him whether he did not overstate the number, he said “No; that although the number appeared large, the population of the Native part of the Town was great—that even in poor families there were twenty-five inmates in each house—and that he meant the total number in those four months.” He said that the fevers usually last from sixteen to twenty days, during which time the persons afflicted are confined to bed and unable to work—that the greater part recover and are able to work, but that some continue sick for life—that the relief these people get now is by the purchase of Native medicine (Panchun) and the employment of quack doctors (Natives.)

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The evidence of Dr. W. Graham is generally to the same effect with that already noticed in regard to the present state of Calcutta, with reference to its salubrity. He says, that it is impossible for the Drains to be in a worse state than they are at present; rudely constructed without any knowledge of the prin-

ciple of draining, the centre of the Conduit being in many places below the level of the extremities—that even on the Chitpore Road the Drains are so useless after a heavy fall of rain as to render a canoe the preferable mode of transit—that he has observed the road impassable after a fall of less than an hour's duration. He considers these Drains as the hot beds of disease—that the consequence of their state, and the want of Ventilation, is of course disease, oftentimes to an alarming and distressing extent—that the Suburbs, nay, indeed, the entire Native Town, must be considered unhealthy from inefficient or rather no Drainage, tainted Tanks, and an external mass of animal and vegetable matter in a state of decomposition surrounding them—that the state of the Tanks as at present is most injurious to life—that even thus early in the season (February 28th, 1837) they were nearly all putrid and dry—that, as the Publick privies were constructed at present, he was satisfied they were fruitful sources of disease, and destructive to the comfort of the residents in their vicinity—that tainted Tanks, want of Water, poisonous Drains, and imperfect Ventilation, were the circumstances presenting themselves in the state of the Town and situation of the inhabitants as in his opinion affecting injuriously the general health and comforts of the population. “Improve these,” he says, “widen and water the Roads, and Calcutta will be as healthy as any City in the world.”

The Report with regard to the salubrity of Calcutta promised by Mr. Martin, in his examination on the 29th of April, 1837, was delivered to your Committee in the form of a pamphlet, entitled, “Notes on the Medical Topography of Calcutta,” some little time afterwards. A copy of it accompanies this Report. This Work is a great extension of the Notes upon the same subject, formerly delivered to the Governours of the Native Hospital. Your Committee understood Mr. Martin to intend it to be considered as, in truth, his evidence upon the subject. He cites Sir Gilbert Blane's opinion, that all predominant diseases are referable to the following general heads, viz., 1st, Vitiated Exhalations and Secretions of the Human Body; 2nd, Noxious Exhalations of the Earth; and 3rd, Depraved Habits of Life. And Mr. Martin adds, that, if we accord with this opinion, we shall at once see how much of publick health in the great matter of prevention of disease may be effected through a practical application of the science of Medical Topography. The injury from human exhalation is removed simply by prevention of crowding, by exposure of the streets and houses to the sun and wind, cleanliness, &c.; and that from terrestrial exhalation by draining, clearing, levelling, and paving, &c. He says, that the brief Topographical History of Calcutta which he has attempted proves what may be done, by a well applied capital, to render one of the worst known localities habitable. He adds, that it also proves that a further application of the same means might even render it healthy.

He proceeds accordingly to give a Topographick Sketch of Calcutta. Your Committee will only notice some of the most striking parts of the narrative, referring to the Work itself for a more complete exposition of the points which he considers to be established. The extreme insalubrity of Calcutta, in the earlier period of its occupancy by Europeans, is proved, he says, by the evidence of Captain Hamilton, who states, that in one year (about the years 1710—15) there were reckoned in August about 1,200 English—some military, some servants of the Company, some private merchants residing in the Town, and some seamen belonging to the shipping lying at the Town—and before the beginning of January there were 460 burials registered in the Clerk's Book of Morfality. In more recent times it was the custom of the European inhabitants of Calcutta to meet on the 15th of November of each year, to congratulate each other on their escape from the periods so emphatically marked by Captain Hamilton.

Your Committee, although agreeing with Mr. Martin that we are far indeed from having effected for this City all that might or ought to be done for it, think that it is not necessary to go further than a comparison of the state here described with the present state of that part of Calcutta which is inhabited by the British, to prove how much may be done "to render one of the worst known localities habitable" by clearing, draining, cleansing, and ventilating it, though but in an imperfect degree; and they think that the state of insalubrity of the part of Calcutta inhabited by the Natives, where little or nothing has been done towards these objects, affords under our own eye proof as well of the efficacy as of the necessity of carrying such measures into complete effect.

Mr. Martin, describing that part of the City occupied by the Natives, says, that the North Division between the Bow Bazar and Mutchooa Bazar comprises perhaps the most dense part of the Native population of Calcutta—that the Upper Division to the north of Mutchooa Bazar is comparatively speaking but thinly covered with habitations, presenting towards the north and east extensive Gardens, large half-dried Tanks, and ruinous Tenements. "It is surprising," he says, "how much the condition of the Native portion of the Town has been neglected in this great City and its Suburbs, in which are to be found all the faults of all the Cities in India."

He proceeds to say, "In the event of a contagious disease, and there is no reason why such should not occur here, the dense state of the Burra Bazar and surrounding parts, the want of water-courses, and means of facility for removing accumulations of filth, &c. would stand as insuperable bars to the best devised Regulations of Medical Police: all masses of building should be opened out, old walls and decayed houses removed, for even under ordinary circumstances these are fertile sources of fever." "Whoever," says Mr. Martin, "has visited the Native portion of the Town before sun-rise, with its narrow lanes and 'rankest compounds of villainous smells that ever offended nostril,' will require no argument in favour of widening the Streets, so as to effect the two greatest improvements of all, as respects the salubrity of the City,—free exposure to the sun, to rarefy and elevate the vapours—and to the winds, to dilute and dissipate them."

"The want of Watering," he says, has been "severely felt in every part of Calcutta of late years; and the more the City extends the greater is a matter of so much importance to health needed." Dr. Fordyce considered the dust of the Streets of London in his day a serious detriment to health. "The deficiency in the supply of water," he adds, "is highly injurious in other ways; and, in order to illustrate this point, I may mention what has been already quoted regarding an epidemick fever in Belfast."

"There is probably," he says, "no subject connected with the publick health and the comfort of the City of more consequence than the state of the Sewers. Those of Calcutta throughout I believe to be defective in number, construction, and fall; without which last, the most approved plan gives no real usefulness. It is stagnation from want of sufficient fall in the Drains that gives rise to deleterious exhalations, and the same applies to the half dried Tanks so numerous here, and to the water detained by inequalities of soil."

In speaking of Ballygunge, Mr. Martin solicits attention to the beneficial effects resulting from very simple, and apparently trifling, improvements executed at his suggestion some years back in the cantonment of that place. Having been appointed to the charge of the Governour General's Body Guard at Ballygunge in 1821, he there found severe remittent fever prevailing to a great extent, and learnt that it had been so for years. He made several careful examinations of the localities, and discovered that in the Lines alone, besides stagnant Drains, there were sixty pools and pits of various dimensions; to all

which, and the neglected state of the grounds around the Regimental Hospital, he had no hesitation in referring, as a sufficient cause of the extreme unhealthiness of the corps. He represented the necessity of Drainage with a sufficient fall, the filling up of the pools and pits, and the construction of two large Tanks, at a proper distance from the Lines. The Governour General, then the Marquis of Hastings, was pleased to order all his suggestions to be carried into effect; and the result during the three following years was a reduction in the frequency and intensity of fever as remarkable as it was satisfactory.

Upon the subject of the supply and the quality of the Water necessary for drinking, for preparing food, and for the purposes of personal and domestick cleanliness, all the answers received to the twenty-six queries circulated amongst the inhabitants, concur in stating that good Tanks and clean well repaired Wells are to be found in very few parts of the Town—that the Well water used, in some places generally, by the lower classes of people is seldom clean or wholesome—that the River water is generally used by the Hindoo inhabitants, especially of the higher castes, both for drinking and culinary purposes, although in some instances it is said that Tank water, or that of a Well, is also used, and that those who live at a distance from the Ganges, and are needy and cannot pay the cost of bringing it, use other water that is at hand for all purposes. It is said that the River water is wholesome for drinking and culinary purposes from October to March, but becomes injurious to health from April to September—that from April until the rains set in it is saline, when drinking water is variously obtained by the better classes—some of whom provide for this season by keeping in store a certain number of jars filled with River water in the month of February—others bring River water for drinking from Balaghur, Santipore, and other places up the country, where its quality and taste remain almost unaltered, or from the Tank Square, Janjree Tullao, or some other Tanks in gardens in the Suburbs of the City, whose water is known to be clean and sweet—while the lower classes of people drink the water taken up from the River the same day, or procured on the 9th, 10th or 11th day of the moon, as circumstances admit—that during autumn the River becomes muddy, when people take the precaution of having the River water cleaned and purified with alum, nirmole, and the like substances.

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pages 4 to 45.

One Native gentleman states, that the state in which water is used for drinking and cooking by the generality of Natives, be it Tank, Well, or River water, is in his opinion decidedly unwholesome. He says there are very few Wells or Tanks really kept clean, so as not to be offensive.

Another Hindoo gentleman says, that there are numerous filthy Pools which supply the poorer classes with water for culinary and other purposes.

Mr. Abercrombie states, that there must be a want of clean water in the Native parts of the Town—that the present Tanks there are small, and extremely filthy in the dry weather, covered with slime and green vegetables—

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that there are no public Tanks along the Circular Road, and the inhabitants, about a month or six weeks before his examination, made a request to the Conservancy Department to have three Tanks excavated.'

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* Captain Thomson states, that the price paid for one mussack of water (about 8 gallons) brought to the Streets and sold there by water carriers, who make their livelihood of it, is a quarter of an anna, i. e. one-third of a penny English at 2s. per Rupee. This is the lowest quantity, he thinks, allowed as the average per head *per diem* in England in calculating the necessary supply of water. In London the supply at present is nearly 20 gallons per head *per diem*. Constantinople is the only Town inhabited by persons of Eastern habits that he knows of, which is supplied with water, for household purposes only, brought by pipes or aqueducts into the Town. There the quantity allotted to each person is 35 gallons. In Rome the supply is fully as much. The water so sold in Calcutta is brought from the Tank in Tank Square, and is believed to be good and wholesome water.

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Modoosoodun Goopto states, that the Natives generally drink Ganges water; he means only the middle and higher classes; the inferiour classes drink what is nearest—the better classes are prejudiced against any but Ganges water—many of the higher classes drink Tank water from the higher parts of the Town—that he does not think the prejudice of the Hindoo inhabitants against drinking any but Ganges water is very strong—and that he thinks the Ganges water not wholesome in Calcutta—that the Natives take pains to draw the River water during the ebb—that they take it at the time of the year when it is least salt, and on the 10th day of the moon—that some bring it from Hoogly and Culna—that the water of the Tanks in the Native part of the Town is generally unwholesome, and some very much so—that he does not find any good Tank in the Native part of the Town—that the water which the Natives are compelled to drink has very great influence in the production of the diseases he had enumerated—that it is the first cause of dyspepsia—that the Water, the want of Ventilation, and the want of Drainage are all injurious; the Water the most so. Being asked, in regard to the water of the Tanks, whether he knows of any wholesome Tank in Calcutta, he says that in Nobin Sing's garden there is a good Tank, and the Loll Diggeec, and some of the Chowringhee Tanks are good; but he does not mention any others. He says, in a subsequent part of his evidence, that the unwholesomeness of the Ganges water is increased by the dead bodies floating in the stream, and the filth thrown in.

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page 93.

Dr. Graham says, that the water in use amongst the Natives is bad and defective, in many places not to be obtained except from a great distance, and that tainted and in small quantity—that the state of the Tanks in respect of salubrity is as at present most injurious to life.

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Mr. Martin states, that the deficient supply of water for drinking and culinary purposes is an enormous evil, and one that is very loudly complained of by the

Natives. In speaking of Bhowancepore, "the most populous of the Native Suburbs," and one of the most unhealthy, he says that good Tanks are very much wanted in this Suburb, the inhabitants having now to proceed to the distant General's Tank in Chowringhee, that being their only resource for the supply of wholesome water.

Notes on Med.
Topog. of Cal.
page 34.

Mr. Martin, in his Notes on the Medical Topography of Calcutta, says, that, owing to the water of the River being brackish during a great part of the year and unfit for general use, the chief supply for all classes of Natives is derived from Tanks, which for the whole Town are about 537 in number, and if properly constructed they ought generally to contain wholesome water—that the Natives, however, do not seem any where impressed with the importance to health of purity in this element, and therefore it is that every where one finds the Tanks in an impure and neglected condition, from the annual accumulations of the vegetation going on at the bottom, so as to render them progressively shallow, until at length they become the half dried, green and slimy puddles which so contaminate every portion of the Native Town. The better classes of Europeans use rain water kept in the common Pegue jars. This, he says, being the purest of the natural waters, ought to be more in use in a country where it can be so readily obtained. The construction of Tanks on approve plans and at convenient distances is yet, he says, a desideratum in Calcutta.

Ibid —page 27.

In a joint Paper drawn up by Baboo Ramcomul Sen and Dr. Jackson, laid before the Governours of the Native Hospital and printed with their Proceedings of 21st May 1835, the want of Tanks in different parts of the Native Town to supply wholesome water for drinking, is stated as amongst the various causes productive of fever—it is said that the want of good Tanks in Calcutta is severely felt by the Native population—that the only Tanks they have in Town are the Loll Digghee, Wellington Square, Pudduldanga, and Hadooa—that the first of these is crowded from six in the morning till ten at night—that of the second the water is said not to be very good—that the third one is shallow, and the little water which it contains in the dry season is not fit for ordinary purposes, and that it has moreover been spoiled by being frequently filled with water carried from the publick Drains—that the water of the fourth is very little used, but owing to what circumstances the writers do not know—that as to the River, they need not describe the insalubrious and filthy state of the water during the greater part of the year—that for want of proper Reservoirs poor people are obliged to use any water which they find conveniently within their reach—that there are a great many shallow Tanks within the Town, which have very little water, and that of the worst quality, during the greatest part of the year, the effluvia from which is sufficient to sicken people passing by or near them.

Appendix (A)
page 16.

In a Paper delivered in to your Committee, in May 1837, by Rustomjee Cowasjee, Esq. one of its members, which is valuable for its suggestions, but still more so for the philanthropick and generous offer which it contains, that gentleman states that he had been present at several of the (then) late fires which had

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devastated the City, and begged to lay before the Meeting a statement of facts that came under his personal observation. During the great fire which prevailed all along the Upper Circular Road, he particularly noticed the scarcity of water in that direction—he observed some fire-engines on the spot, but they were rendered perfectly useless for want of water, there being few, if any, Tanks in the vicinity of the fire. The consequence was, that there was nothing to check the fury of the flames, which went on consuming every hut and building in the way with prompt rapidity—he thought the Committee ought to bring this to the notice of Government without delay, as a more favourable opportunity for purchasing ground and digging Tanks could not present itself than the present. He would recommend that a line of deep large Tanks should be immediately dug at convenient distances all along the Upper Circular Road, where water is more scarce than in any other part of the Town—he thought that Government ought to bear the expense, but as an inducement for them to come forward, *he would undertake, if Government would buy the ground, to excavate at his own expense four large Tanks between the Boitakhana, Mirzapore, and Manicktollah*—and he was sure that many rich landholders would readily do as much or more in other parts of the Town.

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In a subsequent Minute, which the same zealous and active member of your Committee delivered in on the 23rd of the same month of May, he stated, that, on the subject of the scarcity of water in various parts of the Town, as pointed out in his former Minute, he had been requested to lay before the Committee an accompanying Petition, which he delivered in, signed by a great number of the inhabitants of Boitakhana and Bow Bazar, which was intended for the Lottery Committee, but the subscribers having learnt that that Committee had not power to attend to their suggestion, had through their representative, Mr. A. DeSouza, requested him to lay it before your Committee, in order to ensure its coming under the perusal of the Government—and your Committee would, he said, observe, that not only was it represented therein that a great scarcity of water existed in cases of fire, but that even for culinary and other purposes the inhabitants are greatly inconvenienced by the want of Tanks—and he particularly directs the attention of your Committee to a suggestion in Mr. DeSouza's Letter and in the said Petition, that a Tank should be dug on the site of the late Boitakhana Bazar, behind the Roman Catholic Church—that the ground belonged to the Government, who, it seemed, were about to dispose of it; but if applied to for the purpose suggested by Mr. DeSouza, he was sure the Government would grant the request.

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The address to the Lottery Committee, laid before your Committee along with Mr. DeSouza's Letter to Mr. Rustomjee Cowasjee by the latter gentleman, is signed by ninety of the inhabitants residing in the Lower Bow Bazar, Boitakhana Street, and middle Circular Road—and purports to be on behalf of themselves, and other inhabitants residing in those places, in order to draw the attention of those to whom it is addressed to the want of a publick Tank in a central situation in their neighbourhood. It says, that there are a few Tanks to which they could without molestation resort, but the water in them in the

dry season is in a state of stagnation, and over its surface a green slimy substance coagulates, rendering it more filthy than it would otherwise be, and totally unfit for domestick purposes—and that it was doubtful, in their opinion, whether the drinking of it would be healthy—in which, as matter of doubt, your Committee do certainly not concur, holding it to be without all doubt that water in such a state must be in the highest degree unwholesome to drink. The Paper goes on to state, that the water from one or two Tanks of private individuals, which is permitted to be taken only during the rainy season, allows but a scanty supply, and that at certain hours in the day, which the inhabitants cannot always command—that in consequence they are put to frequent and great distress for the want of water, an article so necessary, particularly in the scorching heat of the dry season—and the writers add, that it is really a pity to see the poor and indigent class of the native population begging about for water from place to place. The Paper concludes by stating, that the extreme dusty state of the Road is a circumstance which has had a considerable effect in depreciating the value of the property in that Street—and that the want of a Tank debarb the principal inhabitants from having the Roads watered in front of their respective premises.

On the 4th of May 1836, several of the inhabitants in the neighbourhood of the Circular Road addressed a Letter to the Chief Magistrate of Calcutta, on the subject of the want of water in that neighbourhood; in which they state that there is not a publick Tank along the line of the Lower and Upper Circular Roads: and the consequence is, that a grievous want of water is generally felt both by Christians and Natives—that in this absence of one of the first necessities of life, they beg respectfully and earnestly that he will do them the favour to submit the subject for the consideration of Government, and obtain its sanction for two publick Tanks being excavated in that direction—that these Tanks at due distances, would enhance the value of the ground, with a corresponding addition to the revenue of Government—that they would further be ornamental, and useful at the same time as a resort for children of families resident in that part,—and save many a Native from sickness, and perhaps premature death, arising out of the unavoidable use of bad and unwholesome water. They conclude by trusting that the Chief Magistrate will be pleased to view the request submitted to him with favour, and take measures to recommend in the proper quarter the early excavation of Tanks, which are so loudly called for, and so pressing-ly required for the healths and comfort of those residing along the borders of the Circular Road.

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page 31.

The Chief Magistrate states in his letter to your Committee of the 18th August 1837, that he had received the above letter in June 1836, “but it appeared to him hopeless to press the Government about it.” In a former part of the same letter the Chief Magistrate says, that he has often wished to apply to Government on the subject of constructing a Tank in the neighbourhood of the Bow Bazar, the part of the Town he says unquestionably most deficient in the artificial supply of water, “but had been deterred by a feeling that he could point to no available fund to defray the expense.” For the good intentions of the Chief Magistrate your Committee entertain the highest respect. But they must be permitted to consider as a mistake, much to be regretted, the withholding from the Government the just and crying complaints of any portion of the inhabitants, or suggestions for their benefit, upon speculations regarding matters which are only for the consideration of the Government itself, with whom ought to rest the grave responsibility of judging of the grounds for disregarding such complaints or suggestions.

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page 28.

By this evidence your Committee think it is established that pure and wholesome water for drinking and preparing food is extremely scarce in Calcutta—that

the River water is unwholesome during about three months of the year, being impregnated with salt, and turbid and unfit for drinking unless artificially purified for three months more—so that it is wholesome and fit for use only during half the year, while at its best it is defiled by the quantity of nastiness of which it is the receptacle, and the number of dead bodies which are floated down it, rendering its purification before use necessary to health and comfort—that, except one in Nobin Sing's garden, there is no wholesome Tank in the Native part of the Town, and no publick Tank of any sort in the neighbourhood of the Circular Roads, and that, in the part of the Town which is chiefly inhabited by the British, and in Chowringhee, the only Tanks containing wholesome water are the Loll Digghee in Tank Square, and one or two of the Tanks on the Esplanade—that, in the whole of Calcutta and Chowringhee, there is not one Well which produces wholesome water—that the length of the Native Town to the northward of the part chiefly inhabited by Europeans, and consequently to the northward of Tank Square in which is the nearest wholesome Tank, is three miles and a quarter, and the breadth of it from the River is one mile and a quarter upon the average, in the whole of which space, most thickly inhabited, there is not one Tank or Well which affords wholesome water—that wholesome water consequently is procured by the rich with considerable trouble and cost, and is denied to the poor, the Europeans in easy circumstances catching rain water and preserving it for use at some expense, and the richer Natives paying for bringing it from a distance—that the cost in Calcutta of a quantity of wholesome water, equal to the smallest quantity of water allowed, in calculating the necessary supply of water as the average per head *per diem* in England, where much less water is necessary than here—amounting only to two-fifths of the supply in London—and to less than a fourth part of the quantity allotted in Rome and Constantinople—is a quarter of an anna, in a country where the wages of an ordinary labourer do not exceed two annas per day—that the great majority of the inhabitants are therefore driven to the use of unwholesome water for drinking and preparing their food—and that this is one great cause of the frightful amount of disease which pervades the Town—that for the other purposes to which water is necessary, the preserving personal and domestick cleanliness, and the cleansing and watering the Streets, all matters essential to the health of the inhabitants—and for extinguishing occasional fires, which is essential to their safety—the supply of water is lamentably deficient.

Your Committee have thus laid before your Honour at considerable length, but not at greater than, in their apprehension, the importance of the subject to the health and welfare of this Capital of British India, and of its large population requires, the evidence by which they think the following propositions indisputably established.

I. That there is no natural impediment, nor any difficulty which a due application of science and capital cannot readily overcome, to the thoroughly Draining, Cleansing, and Ventilating, and supplying with wholesome Water, the whole City and Suburbs of Calcutta.

II. That the parts of the City inhabited by the Natives, forming a great population, to whose numbers the British inhabitants bear a very small proportion, and the whole of the Suburbs, are, in all these respects, in a condition of such total neglect, as to render them necessarily the seats of diseases destructive of individual happiness, and of life, and inconsistent with moral improvement, and

political prosperity; and that the still imperfect, though improved, condition in these respects of those parts of the City inhabited by the British, and the noxious exhalations produced all round them by the state of the Native Town, and the Suburbs, and the marshes called the Salt Water Lake, produce in these parts effects inconsistent with salubrity.

III. That the removal of the causes, which now generate the pestilential seeds of disease to so frightful a degree, would be effected by the thoroughly Draining, Cleansing, and Ventilating the City and Suburbs, and draining the Salt Water Lake—and that an ample supply of water for watering the Roads, and for all purposes of cleanliness, and of good and wholesome water for drinking, and preparing food, would be afforded to every part of the City by the formation of a sufficient Head of Water within it, and the excavating a sufficient number of Tanks—and thus the City would be rendered a healthy residence for the Natives of the climate, and no otherwise injurious to European constitutions than through the operation, during the greater parts of the year, of tropical heat, in a climate, no doubt naturally damp, but unassisted by unwholesome exhalations from the soil, or miasmata.

All that remains to be considered upon the subject of salubrity, as connected with Drainage, Cleansing, Ventilation, and Supply of Water, appears, therefore, to your Committee to be, the framing of an adequate plan and estimate for the carrying these objects into effect within the City and Suburbs—the estimating the amount of the fund necessary to complete this plan—the suggesting the means of raising this fund—and the investigating the measures to be adopted for Draining the marshes of the Salt Water Lake.

Your Committee have it not in their power to lay before your Honour a complete plan and estimate for the Drainage, Cleansing, and Ventilation of the City and Suburbs, which it would require more time to lay down, and to make the necessary surveys and calculations for, than the Officers examined can divert from their ordinary and daily duties.

But your Committee has obtained a general estimate from Captain Thomson of the sum, which, in his opinion, the Draining and Cleansing would amount to, but not probably exceed—of the plan suggested by him for covered Sewerage and Drainage, if a plan for open Drainage with cess-pools were adopted—a sketch and approximate estimate from Captain Forbes of a plan suggested by him—an opinion from Captain Thomson and Mr. Abercrombie that the plan of Captain Forbes, of which they highly approve, would, if adopted, cost something less than Captain Thomson's—an estimate from Lieutenant Abercrombie of the expense of excavating the new Tanks, and forming the new Roads, required—and the opinions of two members of the Committee, well acquainted with the value of ground in Calcutta, and of the Sheristadar to the Lottery Committee, upon the probable cost of the Tanks, and of the purchase of the ground, which would be necessary in order to make the contemplated improvements. To the evidence upon these subjects your Committee now proceeds to call your Honour's attention.

Lieutenant Abercrombie states, that it would be impossible to accomplish the objects in view without an entire new system of Drainage—that he has never formed a design of his own, but has read schemes, which need some modifications, but would be a great improvement on the present system. He speaks in particular of Captain Thomson's scheme, and has no doubt of its efficacy. But he speaks of it only as having his approbation in general, and does not appear to have examined the plan and estimates with a view to any accurate correction of either.

Mr. Abercrombie's attention was particularly directed by the Second Sub-Committee to the formation of large Tanks in several parts of the Town, for the purpose of forming airy openings, being combined with broad Streets, and of filling up or excavating hollow and swampy places, and of affording an adequate supply of water—and also to the establishing spacious openings by such new broad Streets from South to North, and from West to East, both for the convenience of communication, and for a free circulation of air. At your Committee's request he furnished them with a plan of new Streets and Tanks by marking them in dotted lines upon the lithographed Plan of Calcutta, which is annexed in the Appendix.

App. (D) Plan
inserted opposite
to page 180f.

The expense of forming six Tanks of 1,000 feet square, which he considered sufficient for the purposes in view, combining, by a proper selection of situations, the advantage of filling up hollows with that of proximity to proper places for the Tanks, so as that they should answer all those purposes, is estimated by Lieutenant Abercrombie, calculating it to cost four Rupees per chowka of the ground excavated, at six and a half lacs of Rupees at least; he thinks more. In a subsequent part of his evidence, however, he says that he thinks his estimate would cover all the expenses. The details of the calculation are contained in a Letter from Mr. Abercrombie to the Chairman, which is inserted in the Appendix. Your Committee, therefore, think that six and a half lacs of Rupees may be taken as a probable estimate of the expense of forming six Tanks of these dimensions, exclusive of the purchase of ground.

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In regard to the expense of a general plan of Sewerage and Drainage, Captain Thomson himself states, that the plan and estimate he drew up he did not consider at the time as a perfect plan, but merely to shew generally what might be done—that he had only a week to do it in, and that he had not given such attention to the subject since, as to say whether he should adhere to that plan or not—that there were objections occurred to him at the time to that plan—that there were many details which it would have taken long to consider—and that he thinks his line of Drains might be improved very much. And in reference to his evidence upon the subject, and to his want of power to furnish the Committee with further or more accurate information, he addressed a Letter to their Secretary, dated in December, 1836, which is inserted in the Appendix. This plan, therefore, can only be considered as a detailed outline, subject, in the opinion of the Officer who framed it, to enlargement and correction—and no estimate of expense framed with reference to it can do more than afford an approximation to the probable cost. As such, however, taking into consideration the large allowance made for contingencies, your Committee think it may be considered. The original estimate given in by Captain Thomson for Sewerage and Drainage was fifteen lacs, including contingencies, and the sum is now grossly taken at twenty lacs. This plan and estimate are inserted in the Appendix.

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Captain Thomson concurring in opinion with Mr. Abercrombie that no system of open Drainage can be rendered effectual to the cleansing such a Town as Calcutta, in which opinion your Committee also concur, it does not appear to your Committee necessary to consider what might be the expense of a plan for open or surface Drainage alone, since it is one which they could not recommend. But it is satisfactory to see that Captain Thomson is of opinion that no saving would be made by its adoption.

Captain Thomson stated to your Committee, that he thought all estimates generally given should be doubled, to allow for contingencies unforeseen. Upon this principle, as your Committee understood him, he stated that he thought

a considerable addition ought to be made to the fifteen lacs for Sewerage. Upon the same principle he said he should estimate a surface Drainage at ten lacs, to which must be added six or seven lacs for Sinks—that nothing appeared to him that would cause any material difference between the expense of the two plans by Sewerage and without Sewerage—and that nothing could be done effectually, and completely under twenty lacs.

Captain Thomson having been again requested to attend your Committee on the 15th of January, and being asked whether the Drainage proposed by his scheme sent in to the Chief Magistrate, and forwarded to the Government, went to such extent and in such directions as effectually to drain the whole of the Suburbs mentioned in the question, viz. those described by Mr. Martin in his Notes on the Medical Topography of Calcutta, replied, that it included all the Suburbs within the Canal, but not Ballygunge nor Kidderpore nor Allipore—that the whole of those Suburbs he had mentioned certainly would be effectually drained by the Sewers and Drains laid down in that scheme, but the surface Drains in the Suburbs were not included in that scheme—that they would be formed at the same time as the Roads, and would not add to the expense of making the Roads—and that the estimate would be increased in proportion to the extent of Road made.

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Lieutenant Abercrombie, when examined on the 15th of January, concurred in saying that Captain Thomson's plan would drain the whole of the Suburbs except Ballygunge, Kidderpore, and those north of the Circular Canal, proper surface Drainage being provided.

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Your Committee are of opinion, upon this evidence, that twenty lacs of Rupees may be taken as about the cost of carrying into effect a system of Sewerage upon the general plan proposed by Captain Thomson, with adequate scouring sufficient for the thorough Draining and Cleansing of Calcutta, and Chowringhee, and the Draining of the Suburbs, with the exceptions mentioned by Captain Thomson, in which sum would be included the cost of the formation of such small Tanks in Calcutta, as would be required for filling up the hollows necessary to be filled up to perfect the system of Drainage—the total reformation of the Roads through the Town, continuing the present lines of Road—the forming foot-paths—the reducing the level of the Roads so as to render the present Drains at their sides surface Drains—and the bringing water from the River by Sewers for watering the Roads and extinguishing fires.

If the existing lines of Road were altered, and new lines adopted, a *saving* would occur in the expense, exclusive of the purchase of ground which would be necessary if new lines of Road were chosen, of Rupees 320,000, but which surplus Captain Thomson thinks would fall greatly short of the expense of such purchases. Upon this part of the question your Committee will speak presently.

In this sum there is no allowance for the expense of the larger Tanks laid down, upon the suggestion of your Committee, by Lieutenant Abercrombie. The *levelling*, to which they would contribute, is provided for by Captain Thomson's plan; and it appears by Mr. Abercrombie's evidence on the 15th of January 1838, that, although the larger Tanks proposed would probably do more than supply the quantity of earth required for levelling by Captain Thomson's plan, a considerable increase of expense would arise, from the necessity of carrying the earth to a greater distance from the place excavated, than would be necessary if no other Tanks were formed than those proposed by Captain Thomson's plan. Both Mr. Abercrombie and Captain Thomson are of opinion, that no Tanks would be generally useful for supplying water to drink, or to cook food with, because the Hindoo inhabitants object to all but Ganges water. Captain Thom-

son says, that if the Tanks were puddled, or were allowed to form naturally by the deposit of mud, not disturbed by cleaning, a sound bottom impervious to the brackish water percolating, they would afford good drinking water, and he thinks they would be used by all but the Hindoos.

From the answers of the Hindoo gentlemen to the questions circulated by your Committee, and the evidence of Moodoosoodun Goopto, your Committee are of opinion, that the prejudice of the Hindoo population against using any but the water of the Ganges for drinking, and preparing food with, has been greatly over-rated; and that there is no insuperable objection among them to the using good Tank water for these purposes. That there is no such objection among the poorer classes of Hindoos appears quite certain; and it is for these that the publick, or the Government representing the publick, is bound in the first instance to provide; the rich being able to administer to their own prejudices, or indulgences, if so disposed.

The benefit of such large open spaces as these Tanks would secure in the centre of the Town for Ventilation is not contemplated in Captain Thomson's plan. The opinion of your Committee of the great influence it would have upon the salubrity of the Town is amply confirmed by the evidence of Mr. Martin and Dr. Stewart.

Your Committee have obtained from Captain Forbes a more detailed development of the plan for the Drainage and Cleansing of the Town, which he intimated in his replies of the 2nd of September 1837, to the queries then furnished him; to which replies your Committee have already in part adverted. In these replies he stated, that, were the Channel therein proposed formed on a new line, so as to open up through the centre of the Town, a new and broad Street running nearly North and South, (that is, one Street running on one side of the Channel, or two Streets one on each side of it) the cost of construction might be repaid by allowing the central Reservoir to remain open, and by permitting to be used in it, subject to a light toll, the smaller class of country boats, in which firewood, and every description of produce, could readily be landed at comparatively little expense in every part of the Town. Supposing it so left open, the side Channels running parallel to it, and forming the Sewers through which the current would be kept up, could be arched over, so as partly to support towing paths or roads, which, also serving as Puckha (i. e. brick-built) wharfs, would speedily become lined with Shops and Storehouses, forming the generally best ventilated and driest Bazar of this City.

The objection, he says, to thus leaving open the main central Channel on account of its proving insalubrious from the nature of the fluids and substances received by it, would, in the dry months, be wholly done away with by the circumstance of its receiving no such contents; as, in the cold weather, and dry season, these fluids and substances would only be permitted to enter the side Channels proposed to be arched over, and through which they would be carried either into the Lake or the River, as found most convenient, by the current resulting from the Head of water in the central Reservoir; and in the rainy season, the main central Channel could also be kept in a perfectly pure and wholesome state by an arrangement partly similar, aided by the great strength of current readily obtained through the Reservoir.

In his evidence on the 15th January 1838, Captain Forbes states, that what he had proposed was merely a skeleton, like the laying down of the great arteries of the Drainage, but that it would apply to the whole of Chitpore within the Circular Canal, to Nundun Baug, to Bahar Simla, to Comarparah, to Scaldah, to Entally, but not to Bhowanepore or Kidderpore—

that surface Drains would be required in addition, either new Drains, or the direction and slope of the existing Drains altered to communicate with these arteries—that the surface Drains must be lined with brick work in order to an effectual system of Drainage—and that he was not prepared to answer the question put to him relative to the probable expense of the additional Drains, levellings, and fillings up required—that he thought the clearing away all belts of jungle and underwood in and contiguous to the said Suburbs, which at present obstruct Ventilation, ought to pay its own expense, or that it might be done under Regulation at the expense of the proprietors.

He stated, that he had not then formed any calculation of the expense of the scheme he had suggested; but that he reckoned on a considerable compensation* from opening the central Channel to the small boats called saltees, about 300 of which come to Calcutta every day throughout the year and used to pay a toll of four annas each, which he was of opinion they would not grudge—that his scheme could be most readily combined with the new Roads and Tanks proposed—that the Road proposed from the Chitpore Canal Suspension Bridge to Park Street, at the end of Middleton Row, would serve for the main central Channel, or Canal, and side Drains—and the Tanks would be valuable extensions of the central Reservoir—The excavation (of these Tanks) would be an additional expense.

Your Committee have since obtained further evidence from Captain Forbes on the 19th of January, in which he states that the following description, drawn by the Second Sub-Committee from his former evidence and the sketch he had presented, was a correct general description of the plan of Drainage and Sewerage sketched in his former evidence; viz. that a Canal be cut from the Salt Water Lake, in a line nearly parallel to the Entally Canal, to the vicinity of the European Burying Ground in Park Street—or, if Lieutenant Abercrombie's plan for new and wide Streets be adopted, the Canal to be extended from thence, in nearly the same line, along Park Street to the end of Middleton Row, and thence in the middle of the proposed new Road or Street to Chitpore Canal Suspension Bridge, carrying the bottom of the Canal all the way on a level $3\frac{1}{2}$ feet below the level of the highest surface of the Salt Water Lake, the sides being lined with brick work, and the bottom rendered impervious to water by brick work or puddling, and on either side of the Canal a Sewer or covered Drain to be formed, arched, and the sides and bottoms formed of brick work, the side Sewers having no communication with the Canal at a less height than is necessary to obtain the greatest fall possible for the water in the Canal to flow into the Sewers with a current for the purpose of scouring them; Drains, and arched Tunnels, for drying the ground on either side, and carrying away the filth, being constructed in lines East and West, emptying themselves into the Sewers—the Sewers and the Canal all serving to receive and carry off the water during the rains—the sewers *only* being employed for this purpose during the dry weather, the Canal at that time being intended to act as a Reservoir containing a Head of water for scouring the Sewers, to be supplied by the rise of the tide in the Salt Water Lake, and when necessary or desirable by the tides of the River, through communications opened with it by proper sluices for this purpose.

He further states, that, on further consideration he thinks that the object of having convenient Docks or Harbours for the classes of boats which would navigate the Canal, could be best and most profitably effected by widening it gradually in the vicinity of the present large Bazars, or in such places as Bazars could most expediently be formed in, into four or five times its average breadth,

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as by this means the side Sewers would be least diverted from the straight lines, which for the purpose of having an effectual scour through them it is desirable, as nearly as possible, to preserve—that the line of the Canal and Sewers might be carried through a number of existing impure Tanks and Ponds, and, if many of these are publick property, it would materially diminish the cost of the ground; and, if private property, they are obviously of little value compared with solid well-raised ground adapted for building on. The Canal would communicate at one end with the River by small locks in the vicinity of Chitpore, and at the other with the Salt Water Lake, and would probably be entered daily from either end by 300 or 400 small boats or saltees, the owners of which would willingly pay for each four annas per day, making a total return of from 50,000 to 60,000 Rupees per annum; carrying into every central part of the Town all descriptions of country produce, as also from the shipping in the River most varieties of imported goods; and as compared with the present means of transport by bullocks and hackeries, or Native carts, it would afford a cheap and expeditious means of conveyance for both classes of commodities to or from the Stores and great Bazars, which would early be erected along the Roads formed parallel to it.

Captain Forbes thinks it probable, that after a time it would be found profitable to open a direct East and West Channel from the River bank, in the vicinity of the anchorage of the shipping, to the central Canal. But, although this would be useful as affording the means of more speedily raising the level of the central Canal, and thus affording a greater Head for keeping up a scour through the side Sewers, he does not consider its construction in the first instance essential to the scheme of Drainage; nor, until central Bazars have been established, does he think it advisable to undertake its formation.

Captain Forbes states, that the water in the Canal or Reservoir would be constantly available for watering the Roads, as also for washing and bathing, and for extinguishing fires; but, save perhaps during three months in the middle of the rains, its communication with the Salt Water Lake would render it unserviceable for drinking, or for preparing food. The system of Drainage and Sewerage proposed would tend to preserve the purity of properly constructed Tanks of rain water, as it would provide the means of carrying off the impure water which under existing circumstances frequently finds its way into Tanks, the water of which is used for these purposes.

In his evidence on the 15th January, Captain Thomson said that he had seen the evidence of Captain Forbes on the plan proposed by him for the formation of the Main Sewers, and that it was such a decided improvement on the plan proposed by himself, that he should think it would supersede it—that it would be a reduced expense, with the exception of the purchase of houses and ground—that in the masonry there would be a considerable saving.

Lieutenant Abercrombie at the same sitting of the Second Sub-Committee concurred in the opinion of Captain Thomson regarding Captain Forbes's plan. He said that it appeared to him to be superior to Captain Thomson's, in as much as it was simpler, and provided for a return. He thought it would be a cheaper plan than Captain Thomson's and quite as effectual. In answers, with which Captain Thomson favoured the Committee on 22nd January 1838, to questions put to him, that gentleman states, that the object of Tanks being to supply earth to raise the Roads, they should be as small and numerous as possible—that numerous small Tanks revetted and puddled, so as to be water tight, would cost less than one large Tank with sloping sides holding the same quantity of water—that the usual depth of Tanks here is 18 feet, and that a square Tank having the side double that of another will cost eight times the

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money—he says that probably proprietors of grounds would not object to have small Tanks of this description made in their grounds, particularly if none of other descriptions were permitted, and thus the cost of ground would be saved.

Captain Thomson also states the expense in his opinion of digging a Basin or Dock, 1000 feet square, and of the purchase of the ground required for such a Basin.

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But his estimate differed so widely from Lieutenant Abercrombie's of the expense, both of excavating Tanks of these dimensions, and of the purchase of the ground, that the Second Sub-Committee, by whom the evidence of these gentlemen was taken, thought it right to communicate it to Lieutenant Abercrombie, who returned an immediate answer, addressed to the Chairman, in which he states the details of his calculation, making the cost of each Tank of those dimensions, viz., 1000 feet square at top and 20 feet deep, with a slope of 4 in 1, equal to Rupees 98,925, or with a slope of 3 in 1, equal to Rupees 102,220, at a cost of four Rupees per chowka, which Mr. Dwarkanath Tagore and Mr. Rustonjee Cowasjee, members of your Committee who had favoured it with their evidence upon the subject, were of opinion was a higher rate than what might be contracted for; not including the inclosure, walks, &c. meant to be included, along with all allowances for extras, in Mr. Abercrombie's first estimate of six and a half lacs for six Tanks.

Lieutenant Abercrombie estimates the price of the ground required to amount, at Rupees 50 per cottah, to Rupees 88,333, for each Tank.

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The Chairman, conceiving there must be something relative to the expense unexplained, thought it right to state this to Captain Thomson, and received a Letter from that gentleman, dated 29th January 1838, which will be found in the Appendix.

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Under estimates by Officers of reputation so very widely different, your Committee would find it impossible to come to any conclusion as to the probable expense of the Tanks proposed, were it not that Captain Thomson's is avowedly a merely conjectural estimate, founded on a comparison with the cost of similar works in England; while Lieutenant Abercrombie's is founded on a calculation, the accuracy of which is not impeached, made on the assumed data of four Rupees per chowka, being a fair contract price. The only error therefore which can exist in it must arise from having taken the contract price at a sum lower than the work could be done for; but, in addition to the opinions of Mr. Dwarkanath Tagore and Mr. Rustonjee Cowasjee, your Committee have obtained the evidence of Roopnarain Gossaul, Sheristadar to the Lottery Committee, who superintended the making of all the Tanks made by the Lottery Committee, and who says that the average expense of excavation and carrying the earth to a distance of forty feet from the edge of the Tank, the Tank being three chowkas, or twenty-seven feet deep, was Rupees 2:6:4 per chowka; and that if the Tank were 1000 feet square instead of the size of that in Wellington Square, which is an oval of 500 feet by 250, it would increase the price by about 1-4th, or 9 annas per chowka. This would make the contract price at three chowkas in depth, Rupees 2:14.

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Mr. Abercrombie's estimate being four Rupees per chowka, at twenty feet deep, and including inclosure and finish of the sides, your Committee think themselves safe in offering their suggestions on the assumption of the sufficiency of the sum stated in Lieutenant Abercrombie's estimate.

Captain Thomson having had charge of the Tolls on the Canal while any were levied, and being asked to state the average number of small boats which had daily entered it, replied that there were 770 small boats in December last 1837, came in with small articles of produce for the daily supply of the

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Bazar, and would formerly have paid four annas each—that there was a number estimated at 1500 saltees per month, in addition to the 770 of which no account is now taken—the former collection from small boats, at four annas each, was about Rupees 7000 a year. He thinks that 500 boats might be depended on daily to enter the proposed Canal—that each boat would carry an average value of four Rupees—that at this rate it would require 5000 boats a day to supply the market; and perhaps 1-10th of this number might be depended on—he thinks probably a toll of two annas would give a larger return than one of four, and be a much greater publick convenience. He suggests the carrying manure from the Town to the Country by these small boats, as is done in China; and to this, as the means of carrying away all litter and the like, your Committee look as a very advantageous use of the Canal, both in an agricultural point of view, and as concerns the Cleansing of the Town and increasing the Toll. Captain Thomson says that the *saltee* never draws more than eighteen inches, and may be allowed to ground every tide without injury.

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Your Committee has obtained from Captain Forbes an approximate estimate of the expense of the plan of Drainage and Sewerage proposed by him.

Captain Forbes, in delivering this estimate into the hands of the Chairman, desired that it might be considered as an approximation only, not being founded on actual survey and measurement, and time not having been at his command to frame it with perfect accuracy. But your Committee understood that the sums per cubick foot for Masonry, and per chowka for Digging, are charged at the rates at which Captain Forbes had ascertained the work might be done.

According to this estimate, which is inserted in the Appendix, it appears that the whole expense of forming the Canal or Reservoir proposed—the Main Sewers on either side of it—Aqueducts for carrying fresh River water into the Tanks proposed as Reservoirs of water for drinking and cooking—side Drains lined with masonry communicating with the Main Sewers on either hand—thirty Bridges over the Canal, and the Sluices and Locks required—would be Co.'s Rupees 743,560, and that of erecting an eighty horse power water-lift steam engine, or two engines of forty horse power each, to be employed to raise water from near the old Chitpore Bridge into aqueducts running round by the Town side of the Circular Canal, and along the Circular Road, and further along Clive Street and Esplanade Row, in aid of the aqueducts now connected with the Chandpal Ghaut engine, and the forming these new aqueducts so as in the dry months to enable the water to be successively thrown into the upper ends of the side Drains, lined with masonry communicating with the Main Sewers on either hand, and thus surrounding the Town with aqueducts, would be Co.'s Rupees 198,000—making the total cost, exclusive of the new Tanks proposed as Reservoirs of fresh and wholesome water for drinking and preparing food, Co.'s Rupees 941,560; but including in this sum the formation of four large Basins upon the line of the Canal, each of 1000 feet long, serving as well for the supply of water for all purposes of cleanliness, as for harbours for the boats entering the Canal, and of the sluices and locks required, connecting the Canal and Reservoir at one end with the River, and at the other with the Salt Water Lake.

In regard to the effects of such masses of water as the Tanks proposed, and the Canal projected by Captain Forbes, upon the healthiness of the Town, your Committee have obtained the evidence of Mr. Martin and of Dr. Stewart.

The former stated, that the salubrity of the Town would be greatly improved by the opening of large Streets and Tanks, such as laid down by Lieutenant Abercrombie, by the mere Ventilation—that such large Tanks kept clean would not generate miasma, but the contrary, by draining the surrounding lands—that it was

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true that the presence of stagnant water, though itself pure, was a sufficient cause to excite the production of miasma from the surrounding soil—but that, in the case of Tanks, the water was collected in mass, and separated from the surrounding soil by percolation—that the effect of Tank-making could not therefore be otherwise than beneficial to publick health; but that a considerable depth was a necessary condition of their salubrity—that he thought twenty feet sufficient, but the deeper the better. He thought that pure mud, permitted to form a sound bottom of a Tank by deposit, would not affect the quality of the water; but that it generally happened that the mud was mixed up with vegetable matter so as very sensibly to injure the water; and that this admixture rendered periodical cleansing necessary—that puddling the bottom would, he thought, in a great measure prevent this—but that periodical cleansing would answer the same purpose—that it would be quite necessary to prevent foul Drains from entering the Tanks; and that the bottoms should, either by the deposit of mud or by puddling, be rendered impervious to the water contained in the soil, where that water was brackish—but that in some places good water was obtained both from Wells and Tanks.

Your Committee, however, think it necessary to remark, that from other and more precise evidence, to which they have already called your Honour's attention upon this point, they have reason to think that there is no Well in Calcutta or Chowringhee from which good water is obtained, and very few Tanks.

Mr. Martin proceeds to say that rain water, when procurable, should always be preferred for supplying the Tanks—that it is the purest of the natural waters; but that the River water would also answer very well, if taken at the proper season of the year, and times of tide.

Mr. Martin also stated his opinion, that such a Canal as that projected by Captain Forbes, running through the centre of the Town, and into the Salt Water Lake, forming a Reservoir for scouring the Sewers, and consequently having frequent falls and currents, would not, if kept in good order, prove injurious to publick health, but quite the contrary.

Dr. Stewart's evidence upon this subject is to the following effect. Being asked whether the salubrity of the Town would be improved by the opening of large Streets and Tanks, such as laid down by Lieutenant Abercrombie, he says that the principles, upon which these alterations are proposed, are universally acknowledged as applicable to all dense and populous Cities, and he thinks the specifick measures suggested the most judicious and practicable which can be adopted with regard to Calcutta; and those in the Native part of the Town by far the most urgent in point of general utility. He apprehends the generation of miasmata, or in other words, the prevalence of disease, among the inhabitants in the immediate vicinity of new Tanks during the period of their excavation, and some time after, until the banks should be fairly consolidated, and clothed with short grass to the water's edge; but the risk, he thinks, would be greatly lessened by the work being done well and quickly, and at a proper season of the year. He is of opinion that those Tanks would soon become potent generators of miasmata; for that all Tanks, except those with springs, in time must be liable in a certain degree to this objection; and he adds, that, at the best, he would have no buildings built nearer to them than the houses in Wellington and Tank Squares. But being subsequently asked, in explanation of this answer, whether he was aware of any generation of miasmata by the Tanks in Wellington and Tank Squares, which was prejudicial to the health of the inhabitants of those Squares, he answered, that he had instanced these Squares as models of good Tanks; and stated the risk of having houses built nearer a new Tank than those in these Squares, having in his eye the well known insalubrity of the Serjeant's Barracks,

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and the Gate Quarters, in Fort William, overhanging the Ditch, which is in fact a Tank.

From this answer your Committee think themselves justified in concluding, that, even in the opinion of Dr. Stewart, large Tanks, such as those in Tank Square and Wellington Square, would not be prejudicial to the health of the inhabitants of houses built at an equal distance from them with that of the houses forming those Squares from the Tanks in the centre, nor consequently to the inhabitants of houses at any greater distance.

Coupling this evidence with that of Mr. Martin, whose long Medical acquaintance with this country, and with some of the most insalubrious parts of it, is well known, your Committee entertain no apprehensions of the new Tanks proposed giving birth to exhalations, which will prove prejudicial beyond the immediate period of their construction.

Your Committee consider it to be well known, that the water of the Loll Digghee, in Tank Square, is not only the best water in Calcutta, but is extremely good, pure, and wholesome water, and that it is supplied solely from the River, at one time of the year, viz., at the height of the rains, when it is filled, and receives no further supply except from the rain, which falls into it, till that time of year comes round again; till when it is left undisturbed. It is known that it remains, for about ten days after being thus filled, muddy and unfit for drinking; after which, having deposited all its admixtures, it becomes again clear, and quite palatable and wholesome.

Of the wholesomeness and excellent quality of the River water taken during the Freshes, and preserved for the rest of the year in a deep and well constructed Tank, your Committee have the best evidence in that of Mr. R. Scott Thomson, one of their members.

He states, that he has been a resident in the neighbourhood of Tank Square for the last twelve years, and has been in the constant habit of employing the Loll Digghee water for all domestick purposes, as well as for the manufactory of Soda-water, from the facilities he possesses, in being enabled to keep up a large supply of the Loll Digghee water in a purified state. He has never had occasion to complain of it as injurious during the whole year, either as a drinking water, or employing it for culinary purposes. He would except the periods when the Tank is filled from the River, at which times it must necessarily contain many impurities; but he has generally found that ten days or a fortnight was sufficient to render it available to the inhabitants as a pure drinking water, and perfectly wholesome. He has had frequent occasions to supply the Loll Digghee water to persons proceeding to sea, and has known it to keep in perfect purity during a voyage to England. One lady, who took a stock of it with her on the homeward passage, wrote to him from Liverpool that she had produced a bottle of it at that port, sometime after her arrival, in comparison with the drinking water there, and it was not surpassed in either sweetness or transparency. The only purifying process it undergoes with him is filtration through a bed of sand and charcoal, and this on a large scale; previously immersing in each Pegue jar a red-hot iron, to destroy the animalculæ. These jars are joined by connecting pipes; and the purified water is gradually collected in a reservoir underneath, from whence it is drawn off in the usual manner. The water in the reservoir has sometimes remained four months without deteriorating, and he considers its salubrity to depend materially on the advantage it possesses by being allowed to settle down in the Tank before it is withdrawn.

Dr. Stewart has no doubt that the miasmata, generated by the state of the Suburbs, extend to affect the salubrity of Calcutta and Chowringhee; but he does not think Calcutta would be sensibly affected by its vicinity to the Salt

Lakes, were the intervening country, and the Suburbs, free from objection, though it doubtless contributes at present to the insalubrity of Calcutta.

He does certainly think, that the Draining and Clearing of the Suburbs, mentioned in Mr. Martin's Medical and Topographical Report, so as to prevent the formation of miasma within their limits, and extending the same precaution to the neighbourhood of the Salt Water Lake, coupled with the prohibition of rice cultivation, would have the effect of rendering Calcutta and Chowringhee free from the influence of miasma, not generated within their own compass.

Being asked whether he was of opinion, that there was any danger of generating miasma by having an open channel of water, such as proposed by Captain Forbes, running through the centre of the Town of Calcutta, and into the Salt Water Lake, he answered, that the measure would not, in his opinion, be attended with any danger, and would, on the contrary, greatly contribute to cleanliness, and health.

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Your Committee think themselves warranted, by the evidence before them, in considering the plan proposed by Captain Forbes, united to the formation of the New Streets and Tanks laid down by Lieutenant Abercrombie, the Streets in the precise lines so laid down, and the Tanks of the size and shape proposed, or of a smaller size or different shape, as shall appear best upon accurate calculation, and either in the spots laid down, or in others near the same localities, if, upon further consideration, any improvement in the places selected should occur—as a plan which would, as far as can be judged without an actual and accurate survey, effect all the first and most material objects presenting themselves for the improvement of the salubrity of the Town; namely, the thoroughly Draining, Cleansing, and Ventilating the City, and the furnishing it with a good supply of wholesome Water for drinking and preparing food with, and of Water for purposes of domestick cleanliness, and for Cleansing and Watering the Streets, and extinguishing Fires, and the thoroughly Draining and Clearing the Suburbs; with which objects would be combined the advantage of a Canal through the centre of the Town, affording employment for a great additional number of country boats, communicating with the River on one hand, and the Salt Water Lake on the other, and bringing into the Town, and landing in it, at a much reduced expense, country produce for consumption and exportation, as well as foreign produce imported, and the establishment of quays, and warehouses, and shops, in the most desirable, commodious, and airy situations, for the reception or sale of such commodities—the forming spacious Streets for communication wherever wanted—and the opening up to every part of the Town a free and ready access to the banks of the River, from which the far greater part of it is now debarred.

Your Committee come now to consider the means of providing for the probable cost of the improvements proposed. They have already said, that, without an accurate Survey and Estimate, it is impossible to attain more than an approximation to the sum, which may probably be required for these improvements. But, if the result of their inquiries into the practicability, and necessity, of attempting to eradicate the monstrous evils which prevail, and the probability of success held out by the plan, which has been generally described, be such as to induce them to think that plan one, which it becomes the liberal and enlightened Government, to whose care the interests of the people of India are confided, to refer to its Engineer Officers to mature and report upon—they think that they have been able also to obtain such general evidence of the probable amount of the funds, which it will be necessary to have at command, and of the means of raising them, as to authorize them humbly, but earnestly, to recommend to your Honour the immediate consideration of these subjects, with a view to directing an accurate investigation of the detail.

Having laid before your Honour, in no exaggerated terms, the miserable state of the City, as affecting equally its Physical, Moral, and Political Salubrity, it is indescribably consoling to your Committee to feel assured, that they have sufficient evidence to satisfy them generally, that the means of remedying this evil in all its parts are within the power of the Community, and at the command of the Government.

The expense of carrying into execution the plans of Drainage and Sewerage, which have been suggested, your Committee are of opinion may be taken as follows:—

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Captain Thomson's plan is calculated not to exceed 20,00,000 of Rupees, from which if the extra cost of 3,20,000 for lowering the existing Roads, beyond what it would cost to form new lines of Road, be deducted, there will remain Rs. 16,80,000; or say, Rs. 17,00,000 for Draining, Cleansing, and Levelling, forming small Tanks, and new Roads, and Side Foot-paths, and supplying the City in all its parts with Water for watering the Roads, extinguishing Fires, and the purposes of Cleanliness.

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Captain Forbes's plan is in the opinion of Captain Thomson himself, and of Lieutenant Abercrombie a cheaper plan. His estimate for Drainage and Sewerage, including a Reservoir or Canal with four considerable Basins or Harbours, and a Steam Engine and Aqueducts for supplying the Town with water for watering the Roads, extinguishing Fires, scouring the Drains, and the purposes of Cleanliness, amounts to 9,41,560 Co.'s Rupees. This estimate does not include the formation of Roads and open Drains, and the general levelling and filling up of holes necessary for the Drainage, which are included in Captain Thomson's estimate. Your Committee, therefore, applied to Lieutenant Abercrombie for an estimate of the cost of these works as subsidiary to Captain Forbes's plan; in answer to which application Lieutenant Abercrombie, in a Letter to the Chairman, dated the 1st of February 1838, states that the new Streets marked on the map sent by him to the Committee are eleven miles in length—that the expense of forming new Roads will amount to about 20,000 Rupees per mile; their whole expense of construction will consequently amount to Rs. 2,20,000, including the preparation of ground for the reception of metal, after it has been cleared of all obstructions, but exclusive of the expense of ramming, rolling, and superintendence, which will be provided by the regular establishment. He states the expense of surface Drains to be about 5,000 Rupees per mile; but, to provide for entrance bridges to houses in populous districts, he would increase the estimate to one Rupee four Annas per running foot on each side of a Road, and that eleven miles of surface Drainage will therefore cost Rs. 72,600—that he estimates the expense consequent on the excavation of the Canal, being the cartage and spreading of the earth excavated, at Rs. 239,580—making the total of Lieutenant Abercrombie's estimate for Roads, surface Drains, and Levelling, Rs. 5,32,180; which sum added to Captain Forbes's estimate of Rs. 9,41,560 amounts to Rs. 14,73,740; or say, Rs. 15,00,000.

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Lieutenant Abercrombie's estimate of six new Tanks of 1000 feet square is Rs. 6,50,000; but he said it was probable that the earth afforded by those large Tanks would be more than sufficient for the levelling required. Under these considerations your Committee are of opinion, that the new Tanks might be formed of smaller dimensions, by which a considerable saving might be made, and some saving would occur from making them oblong instead of square, though of the same cubical contents; the earth excavated having to be carried to a shorter distance on either side. If a steam power were employed to raise the earth of the side, Captain Forbes is of opinion a still greater saving might be made.

Your Committee, therefore, think that the expense of workmanship and labour in executing Captain Forbes's plan in conjunction with the new lines of

spacious Roads or Streets, the surface Drainage and Levelling required, and forming six Tanks of sufficient dimensions in the situations proposed, may be roughly taken as not likely to exceed twenty-two or twenty-three lacs of Rupees.

The next consideration is the purchase of the ground necessary for these several purposes.

Supposing the new Streets to be made sixty feet wide between the buildings on each side, within which space no encroachment is to be permitted, and that ground 180 feet in width along the proposed new lines were to be purchased by the publick, whereof sixty feet in the centre to be formed into a Road, and sixty feet on each side reserved as frontage, to be sold or let for building according to a plan; and supposing the proprietors to be compellable to sell at the fair present market price, to be adjusted by a jury in case the parties should not agree, such ground as commissioners to be appointed should require, it appears by the evidence of Rustomjee Cowasjee, Esq., with the entire concurrence of Dwarkanauth Tagore, Esq., both members of your Committee, that, on the extended line of the Strand Road to Chitpore Bridge, and on the whole line of the Chitpore Road, and in the Burra Bazar (that is, in the places where the ground to be purchased would be the dearest), the sale of the frontages would pay the cost of the whole ground purchased, except where it was covered with very valuable buildings, as to which it was impossible to form an accurate judgment—that in some places the frontages would fetch more than this, in others less—that in places further from the centre of the Town, and the great resort of business, than those above mentioned, the improved frontages would probably not fetch more than twenty-five per cent. additional on their original cost, but that the outlays in the purchases in these situations would be proportionally small. Where the purchase was the dearest, therefore, the sales would pay the whole price, and where it was the cheapest, the loss would amount to somewhat more than 16 per cent. of the purchase money.

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But these gentlemen are of opinion, that, if the frontages were let on building leases, they would fetch a ground rent equal to 12 per cent. per annum, or probably more, upon the sums for which they could be sold.

Your Committee has also obtained the evidence of Roopnarain Ghosaul, Sheristadar to the Lottery Committee, from which it appears, that the ground the Lottery Committee bought in the course of their improvements, which was the dearest, was in the Strand and Clive Street—that it there cost them from 800 to 1600 Rupees per cottah—and that they sold there ground filled up in a part of the channel of the River, which brought 1900 Rupees per cottah, being more than 50 per cent. beyond the average prime cost of what they bought, if the average be taken at the medium of what they paid, or even considerably higher—that other ground they sold there at from 800 to 2000 Rupees per cottah still greatly more on the average than 50 per cent. above the average cost.—The cheapest part they bought in was Loudon Street and Short's Bazar. There they paid only 50 Rupees per cottah, and what they sold, after making the improvements of Tanks, Roads, &c. they got 150 and 200 Rupees per cottah for. They also bought in Amherst Street and Cornwallis Street. There they paid on the average 200 Rupees, and sold at from 380 to 440 Rupees per cottah; and, although Mr. Money, the purchaser, appears to have thrown up his bargain, the price, at which it was sold to him, was, in the opinion of the witness, a moderate price, the Committee having sold there as high as 500 Rupees per cottah in smaller lots.

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The witness states; that the ground they purchased on the Chitpore Road for widening it cost them, exclusive of buildings, 600 Rupees per cottah—that they have not sold any there, but that the value of the ground on the side of the Road was doubled in consequence of their improvements—and that he knows of

a sale made to Ram Gopaul Mullick of ground there, after these improvements were made, at from 800 to 1000 Rupees per cottah.

It appears that for Wellington Square the Lottefy Committee bought sixteen or seventeen beegahs, at from 200 to 300 Rupees per cottah—and there they sold the remainder, after their improvements, at 400 Rupees; about one-fourth higher, as the witness says—but unless the average of the first cost considerably exceeded the average of 200 and 300 Rupees, the price obtained on the re-sale must have been on the average one-half higher than the prime cost.

The witness referred to the accounts in his possession, and your Committee applied to the Lottery Committee for leave to their Sheristadar to produce them, thinking that an account of the actual expense of forming that large Square and Tank, and of the cost of the ground and produce of the re-sales, would be of great use in forming an opinion upon the probable cost of the New Tanks now proposed, and of the ground to be purchased. The Chairman has directed the application to be more than once repeated; but your Committee has only been favoured with the accounts since this Report has been in the hands of the printer, and can therefore only refer your Honour to the abstract of them which is printed in the Appendix.

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This witness says, that, if ground were bought sixty feet wide for a Road (or Street) and sixty feet on each side of it, and after making the Road the side strips were sold, they would sell for 50 per cent. more than the purchase money—but he thinks if much wider than sixty feet they would not sell so well.

He says that the Lottery Committee had had a Road estimated from the New Mint to Chitpore Road, to be made by widening the Burtolla gully.—He says that the ground there could now be bought, for the formation of that Road, at an average of 350 Rupees per cottah, besides buildings, and that, if the sides or frontages on the sides were re-sold, they would fetch 600 Rupees per cottah, if not more than thirty feet wide—and he would not recommend the Road to be more than thirty feet wide, and fifteen feet on each side for sale.

The witness probably thinks that lots of these dimensions would be more readily sold than larger lots. But he was of opinion that lots thirty feet wide might be sold for 600 Rupees per cottah—and it is the opinion of Mr. Rustomjee Cowasjee and Mr. Dwarkanauth Tagore, as above mentioned, that frontages sixty feet wide would sell in that part of the Town, after the new Streets were made, at an advance of 50 per cent. upon the prime cost—an opinion which your Committee think confirmed by the evidence of Roopnarain Ghosaul.

It appears to your Committee upon this evidence, that, by the sale of side frontages, or by borrowing, on a well secured ground rent to arise out of them, leaving an annual sinking fund, the publick may raise, if not the whole, a considerable part of the sum to be laid out in the purchase of ground, and of such buildings as it may not be possible to avoid removing, without too great a deviation from the line of the Street.

It is in evidence, and must indeed be apparent from the magnitude of the undertaking, that it would require some years to complete the works proposed. Your Committee are of opinion that it would occupy at least from five to six years—that, if Captain Forbes's plan be adopted, it is essential that the first part of it to be executed should be the Canal, and Main Sewers on either side thereof; and that, so soon as the Canal shall be finished, the Toll proposed to be raised upon it will be annually available, for the purpose of carrying on the further improvements, or paying the interest of the money raised by loan—that such savings as can be made in the present expenditure in the Conservancy Department, and such sums as may be raised by new taxes, will be annually available in like manner for these purposes—that the total cost of the undertaking, including so much of

the cost of the purchase of ground and buildings as may not be compensated by the sale of frontages, or raised upon the security of ground rents, may be taken as not likely to exceed, if it shall equal, 30,00,000 of Co.'s Rs., which may be expended at the rate of from 5,00,000 to 6,00,000 per annum—and that the sum necessary may be raised annually on Government security at the interest of 5 per cent—and an annual revenue applicable to the payment of the interest, and establishing a Sinking Fund, at the end of the period of six years, for the liquidation of the principal within a reasonable time, may be obtained from savings in the present amount of Municipal expenditure, the imposition of very moderate taxes on those who would directly reap the benefit of the improvements, and the annual proceeds to be reasonably expected from the imposition of a moderate toll upon the proposed Canal.

To the details by which your Committee think this calculation justified, they will advert in a subsequent part of this Report.

In conjunction with the great objects treated of in the preceding part of this Report, the attainment of which forms the first thing necessary to the removal, or alleviation, of the present lamentable state of disease among the Native population, and the general insalubrity of the City, your Committee has, in pursuance of the objects of its appointment, directed its attention to other concomitant causes of disease, and obstacles to convenience, improvement, and prosperity, which now abound in it. To these they will presently call your Honour's attention.

But previously to so doing, it appears to your Committee that in a City, in which from its locality and the absence of the necessary precautions to remedy the defects of it, disease is so prevalent that nearly two-thirds of the Native population are said to be afflicted with one of its varieties alone—where out of a fixed population estimated at under 200,000, or a floating population of 300,000, it is said, that within four months of the year 18,000 persons are attacked by fever, diarrhœa, dysentery, and cholera—and it is affirmed that there are not within it any Native children in perfect health—it is their duty to enter upon the consideration of that, which formed the first of the original objects of their constitution—the Medical treatment and care bestowed upon the Native population, not until now, they lament to say, the objects of the attention of the English Government in Calcutta.

The Governours of the Native Hospital state, in their address to the Publick that “Thousands of the poorer Natives in and about Calcutta are continually exposed to the ravages of the more prevalent diseases of the country, and in a very large proportion, *without a chance of being relieved*: that they die in thousands, not from the original force of disease, but from the want of an asylum like that now proposed, viz. an Hospital.”

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Nor is their assertion destitute of sufficient proof to support it. Mr. Martin, in the first Paper he submitted to them, states, from his Medical observation, that “Fever is so universal with the Native, that, until enlarged spleen or bowel complaint (the sequelæ to often-repeated fever,) seizes him, he never thinks it necessary to apply for aid; and when he does, it is but to accelerate his fate: the compound of arsenick and spices, or the rude preparation of mercury, given by the Native Doctors, is efficacious to rekindle the feeble remains of constitutional power, only to sink the more rapidly in death.”

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The first observation, accordingly, which your Committee have to make upon this branch of their inquiry, is one, which they think must strike a stranger to be the most remarkable ever made, as applicable to the seat of the Government of a great nation, and the chief emporium of its trade—namely, that there is no place in Calcutta, of the nature of an Hospital, maintained for the reception of any persons of the Native population afflicted with fever, or other diseases, the subjects of Medical treatment, except the utterly destitute, who are found

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lying in the Streets, and whom it is a matter of Police to remove.* For these a small Hospital attached to the Police is provided, which is represented, in the Note furnished by the late Dr. Vos, to be of sufficient size for its purpose, to have existed for about sixteen years, and to have owed its existence, as Dr. Vos believed, to W. C. Blaquiere, Esq. the Magistrate. But even this Hospital "does not seem, from Dr. Vos's account, to afford the means of separating the patients in the manner necessary to their speedy recovery, or in some cases to their recovering at all; "for it is filled up," he says, "with all kinds of people, who have disorders of the most contagious and malignant character, viz. fevers, dysentery, diarrhœa, spleen, syphilis, small-pox, and old sores, and often women near their confinement. In case," he adds, "a Fever Hospital be established, of course they will have the opportunity of entering it earlier, and in a better condition, and thus will have a greater chance to recover; as it is impossible for any man to recover from fever speedily (if at all) whilst in the same place with many labouring under the worst of diseases."

"The population of Calcutta," says Dr. Vos, "is increasing so much, that there is an immediate want of an Hospital for poor Hindoo-Britons and poor Roman Catholics. I have continually poor Christians in the Police Hospital."

"A Lying-in Asylum for Christian and Native women would also be a great acquisition, for I am convinced that many, in small huts, and filthy places, die for want of proper room and care, being very poor, but not quite destitute."

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In the Observations by Ramcomul Sein and Dr. Jackson it is said, that "there are no Institutions which are of adequate service to the immense number of poor, homeless, and helpless Native inhabitants, and immigrants, in and about the Town of Calcutta. It may be said that there is a Native Hospital, and two public Dispensaries, but the people do not generally avail themselves of the benefit of these Institutions." "The Dispensaries supply medicines to such persons as are able to attend personally, and to shew themselves to the superintending Surgeon or Apothecary; but, if the dose of medicine they receive does not produce the expected relief, or operates with any degree of violence, or if their illness increases, they do not present themselves again, or apply for more medicines, and nothing more is known of their history. Indeed there are many who receive medicine from the Dispensaries, but do not take it at all. The Native Hospital is well calculated, and was originally established, for patients labouring under external, or accidental injuries, such as are constantly sent by the Police; but people affected with fever, or other diseases, of whom great numbers die annually, derive hardly any benefit from it."

Your Committee will presently have occasion to shew that this must be taken to mean, not that the Native Hospital confers no benefit on persons afflicted with fever, and other diseases requiring Medical treatment, but that this is not the object of its establishment; and that its power of receiving patients of this description, though exercised at the expense of a considerable diminution of its efficiency in discharging its duties as a Surgical Institution, is miserably inadequate to the purpose.

It appears from Mr. Martin's explanatory Note, that the usefulness of the Native Hospital as a Surgical Institution, is impeded by the necessity existing at present, from the want of an Hospital for Medical cases, of admitting into it cases of fever, and dysentery, and that there is this disadvantage in mixing the two classes of Native patients—that the Medical patients are often frightened away before their cure is completed, by viewing the cases of severe wounds, accidents and

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* NOTE.—The Native Hospital is by its foundation limited to *Surgical cases*, though from necessity it is rendered by the Governors subservient to Medical cases also among the Native poor. The small Hospital attached to the Medical College was only at this time coming into existence.

operations, common to a Surgical Institution, like the Native Hospital. "This," he says, "very frequently happens to us."

It is stated, in the Observations above referred to of Baboo Ramcomul Sein and Doctor Jackson, that besides the multitude of resident inhabitants destitute of Medical aid, except from Dispensaries, "people from various parts of Bengal come to Calcutta to seek for employment, to beg charity and assistance from their friends and acquaintance, and for speculations. They come and live with persons who are employed in offices, and workmen, and those who follow menial professions, and whose means are very limited. If they are able, or willing, to live separately, they hire lodgings in some hut or old building, the small apartments of which are let from two annas to two rupees a month. These people do not possess a sufficient quantity of clothing; they are naked almost day and night; they have no bed, and lie down on mats and leaves spread on the damp ground in their cells or holes. In hot weather they sleep out in open places, and on the borders of the Road, exposed to the weather, and all its changes."

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"When they get fever or cholera, they have nobody to attend on them, nor have they any means to procure Medical aid, clothing, or food suitable to the state of their health. If it is fever, it increases, and becomes violent day by day; many cannot afford to buy even a dose of *Panchun* (the commonest and cheapest Native remedy) which costs but one pyee; and, even if the people of the house, or their neighbours, give them pyee enough to purchase it, they have neither place nor means to prepare it; and, destitute of all the comforts and necessities of life, their illnesses soon arrive at a stage, always dangerous, in which their recovery must be generally considered doubtful, while they are, without any care and attention being paid to them, exposed to the vicissitudes of atmosphere, with nothing but unwholesome water for drink. The friends of the miserable being with whom he lives, or at whose place he hires his lodging, finding his case bad, become alarmed, send for a Byda (Native Doctor) to prescribe for him. But the landlord or host now becomes involved in another difficulty: he cannot attend himself to the sick, and neither has, nor can give means to take proper care of him, and, therefore, to get rid of his sick tenant or guest, these are the modes usually resorted to. He procures him either a boat or dooly to carry him to his family in the country, which he never, or at least seldom, reaches. By the shaking and agitation he receives in his weak state, exposed to the weather, he soon dies. I have seen," says Dr. Jackson, "boatmen and bearers often put down such men on the ghauts and bank of the River, &c. where in a few hours they have expired, or they are often attacked by beasts of prey before they cease to breathe. The second, and more convenient mode adopted in Calcutta for disposing of such a man, is to carry him to the bank of the River, and there to place him under the charge of some hired people at the ghaut of the River, waiting his dissolution."

"This mode is considered more convenient and less expensive and better for the deceased as well as the persons to whom he was attached. Another reason for this also is the well known Hindoo belief, that, when a sick man considers that he has no hope left of being recovered, he had better die by the holy stream. Allowing the sick to die in his cell, and throwing his body into the stream, is reckoned infamous, and disgraceful to the survivors and friends of the deceased, and cruel and unbecoming in the persons with whom he has lived. But if he dies on the bank of the Ganges there is some consolation for his family and friends, and at the same time it saves the landlord or his host from the reproaches, which might otherwise be poured upon him by the friends."

"It is to these circumstances that the *Unterjatie*, or ghaut murder, owes its derivation, about which so much has of late been said in the Calcutta papers."

"To save people of this description," says Dr. Jackson, "and those whose cases prevent them attending at the existing Institutions for Medical aid, a place in the central part of the Native Town has long been wanted. I mean an Hospital on a moderate scale to receive houseless and friendless and sick Natives, in which they can obtain common Medical aid and attendance, and a temporary asylum during convalescence."

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From the evidence of Mr. J. A. Ryper, Apothecary at the Guranhatta Dispensary, it appears that at that Institution they have from two hundred to two hundred and fifty patients daily, including old and new patients—about fifty or sixty new patients daily. "They generally remain," he says, "fifteen or twenty days under our Medical care, sometimes a month, according to the diseases. The most usual diseases are bowel complaints, remittent and intermittent fevers, eruptions of the skin, and syphilitic eruptions, dysentery, and rheumatism, and a great many cases of spleen, not many of liver." He does not inquire from what part of the Town the patients come, and therefore cannot say in what part, any of these diseases are most prevalent. He believes that in general cures are effected. Many of them come to inform him that they are cured. About one-third of those treated come to inform him of their having recovered. He cannot know whether the other two-thirds have been cured or not. About one-third cease to return for advice before, he thinks, they can have been cured. Of this one-third, his conclusion is, that they have not been cured. About a third of this third may be cases in which the disease though not cured, has been alleviated, which may account for the patients not returning; but in the remaining two-thirds of these patients who do not return, the disease, in his opinion, has not even been alleviated. He has no means of knowing what becomes of those who do not return. The bowel complaints, fever, and dysentery, and cases of spleen, are generally likely to terminate fatally if the disease is not cured. About one-third of the patients labouring under these diseases likely to terminate fatally, do not return for advice after having come to consult him; his opinion is that those patients must have died. He does not attribute their not returning to disinclination; he attributes it in many cases to the disease disabling them from coming, to their poverty not affording them the means of being carried there, and to their distance. There are many cases in which they send for medicines. He generally gives them a ticket. It is a disadvantage, in his opinion, so great, as to interfere very materially with the probability of cure, that he has not the opportunity of seeing these patients at the time of renewing his prescriptions.

The persons who send for medicines, without returning personally to the Dispensary, are included in the one-third mentioned as not returning. He has no better means of knowing whether these recover, than whether those do, who do not send for medicines. There are a great many of those, who labour under these dangerous diseases, who neither return nor send for medicines. Of those labouring under these dangerous diseases, who continue to present themselves personally at the Dispensary, about half are cured, and about half die.

In the cases of bowel complaints and dysentery, the patients withhold coming to the Dispensary, till the disorder is too far advanced to admit of a remedy. They form a large proportion of the dangerous diseases.

In cases of fever, both remittent and intermittent, they generally come in time. In cases of spleen they generally delay till too late.

He has few cases of cholera. The patient is generally cut off before he can be taken to the Dispensary.

They have so very few cases of women, that he cannot properly form an opinion regarding their comparative liability to disease. Their having so small a number of female patients is owing, he says, to their disinclination to appear

so publickly as they must do. They have a private apartment in which they might be received ; but no respectable Hindoo or Mosulman woman, he says, would appear before him or any stranger ; and the low class of women who come are careless who may be present at their statement of their case. They have no female attendants at the Dispensary. He does not think if they had, that any higher class of women would come to the Dispensary ; but he has no means of forming a correct opinion.

They have a few children brought for advice, generally for teething and bowel complaints, and sometimes fever, and sometimes spleen. They generally succeed with the children. Not many of them cease to be brought before they are cured. This confirms him in the opinion, that the grown persons ceasing to come proceeds more from disability than disinclination.

Your Committee has obtained from the Surgeon of the Native Hospital Returns of the numbers of Medical and Surgical cases treated at the Native Hospital for the last four years, viz. 1833-4, 1834-5, 1835-6, 1836-7, from which it appears that the number

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Of House Patients in Medical cases was in 1833-4,	557
Of House Patients in Surgical cases,	344
Total,...			901
Of House Patients in Medical cases in 1834-5,	...	...	583
Of House Patients in Surgical cases,	...	...	140
Total,...			1,023
Of House Patients in Medical cases in 1835-6,	...	...	595
Of House Patients in Surgical cases,	...	...	419
Total, .			1,014
Of House Patients in Medical cases in 1836-7,	...	...	598
Of House Patients in Surgical cases,	...	...	358
Total,...			956

Your Committee was somewhat surprised to find that the number of Medical cases received into the Hospital considerably exceeds the number of Surgical cases, and that although the numbers of cases of both descriptions have considerably increased, the greatest increase has been in the number of House-patients in Medical cases during these four years ; the number of House-patients in Surgical cases having increased from 344 in the first year, to 358 in the last, having been very considerably larger in the two intermediate years ; while the Medical cases shew a gradual and constant increase from 557 in the first year, to 598 in the last. The Out-door patients are not distinguished as to their cases being Medical or Surgical. They appear to have been of the greatest number in the first year, when they were 81,382. They fell off in the second year to 72,380, from whence they rose in the third year to 75,281, and in the fourth year to 75,680.

Your Committee consider this as decisive evidence, that the prejudice among the Natives against availing themselves of the relief afforded in Medical cases by their entering an Hospital, has been greatly overrated.

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The number of Applicants who have received medicines and Medical relief from the Dispensaries during the above period is as follows :—

At the Guranhatta Dispensary in the year 1834,	...	...	38,336
At the Park Street, or Colingah Dispensary,	...	...	55,841
Total in 1834,			94,177
At the Guranhatta Dispensary in 1835,	...	...	39,288
At the Park Street Dispensary,	...	...	46,496
Total in 1835,			85,784
At the Guranhatta Dispensary in 1836,	...	...	38,545
At the Park Street Dispensary,	...	...	42,511
Total in 1836,			81,056
At the Guranhatta Dispensary in 1837,	...	...	37,256
At the Park Street Dispensary,	...	...	45,285
Total in 1837,			82,541

The Applicants for Surgical treatment at these Dispensaries during the above years were as follow :—

At the Guranhatta Dispensary in 1834,	...	...	43,442
At the Park Street Dispensary,	...	...	28,004
Total in 1834,			71,446
At the Guranhatta Dispensary in 1835,	...	...	14,263
At the Park Street Dispensary,	...	...	31,508
Total in 1835,			75,771
At the Guranhatta Dispensary in 1836,	...	...	45,371
At the Park Street Dispensary,	...	...	32,997
Total in 1836,			78,368
At the Guranhatta Dispensary in 1837,	44,485
At the Park Street Dispensary,	32,990
Total in 1837,			77,475

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Appended to the Return from the Colingah, or Park Street Dispensary, there is a Note by Dr. Stewart, the Superintendent of that Dispensary, in which he states that the Tables furnished, afford most imperfect statistical information—that it amounts, in truth, only to the number of prescriptions supplied, or of dressings applied; since the name of each patient is entered anew in the Register

every time he makes his appearance and application at the Dispensary—that it is obvious that a case of rheumatism may be able to attend daily for any length of time, while a fever patient may not be able to visit more than once or twice, and a case of dislocation is disposed of at once—that the average number of daily applications is 250—that with the present establishment it is not possible to make any alteration in the system, which, though defective, certainly works well.

Your Committee cannot permit the observations in Doctor Stewart's Note to pass without observing, that they demonstrate, to the satisfaction of your Committee, the total impossibility of arriving at any conclusion regarding the number of persons relieved—the extent to which they have been relieved—the number of instances in which the medicines and advice given have wholly failed in affording relief—or in which the patient, from the necessarily limited nature of that relief, has sunk a victim to its inefficacy—from the Returns made by the Dispensaries of the number of daily applicants for medicine and advice. No means, as it appears to your Committee, of approaching to a reasonable conjecture as to the proportion of cases of success to those of failure, or of the amount of relief to the amount of expenditure, is afforded by these Returns.

Your Committee applied itself to the obtaining further evidence upon the actual amount, and nature, of the diseases prevalent in Calcutta, and the Suburbs, among the poor, at different seasons of the year.

Upon these subjects, they have obtained the evidence of Mr. Martin, Surgeon to the Native Hospital, a member of your Committee—of Mr. O'Brien, the First Assistant in the Native Hospital—of Dr. Stewart, Surgeon, and Mr. Reid, Apothecary to the Colingah Dispensary—of Mr. R. O'Shaughnessy, Surgeon, and Mr. Ryper, Apothecary, to the Guranhatta Dispensary—and of Modoo-soodun Goopto, the Medical Native practitioner formerly examined. These are the persons who appear to your Committee to have, from their situations, and the great majority of them from their long experience, the most knowledge, and that no inconsiderable share, of the state of disease among the Native poor of Calcutta.

They will first direct your Honour's attention to the evidence of Modoo-soodun Goopto, in continuation and explanation of the evidence which he had formerly given before the First Sub-Committee, already adverted to. He continued of opinion that the months of August, September, October and November are the most unhealthy of the year, and that the diseases he had formerly mentioned, intermittent, remittent, and bilious fevers—(under which last name he explained that he meant to include all continuous fevers)—dysentery and cholera, are during these months the most prevalent diseases—that during this, the most unhealthy season, the same diseases occur every year, but the number attacked by them, and of those attacked the number who die, varies very much in different years. He says it is very difficult to state the number who are afflicted with them during these months, but that he had no reason to believe that his former statements—by which it will be recollected that he estimated the number at about 500 sick in each Thannah, or about 18,000 in Calcutta—differ materially from the truth—that this statement referred to a very unhealthy season; and that, in such a season, of the number of persons of all descriptions, afflicted with the various diseases he had mentioned, about one-fifth, or 20 per cent. probably die before December; about one-tenth of these diseases run into the following months of December, January, February and March, of which probably one-half terminate fatally before the middle of March; and of the remaining half many recover; but, with others enlargement of the spleen and affections of the liver last, with intermittent fever, for many months, when they terminate fatally.

He says that the bilious and remittent fevers, that is, the fevers most immediately dangerous to life, and in which the strength of the patient is the most

immediately prostrated, are usually more in number than those of intermittent fever, that is, those less immediately dangerous to life, and which leave the patient at intervals the power of locomotion—that the cases of primary intermittent fever do not exceed 20 per cent. of the other two, that is of the immediately dangerous put together; but, if the secondary intermittents be added, that is, the bilious or remittent fevers which have for the time spared the life of the patient, and have become intermittent, the number of intermittent fevers will amount to nearly 50 per cent. of the whole. Of the *poor* attacked by *remittent and bilious fevers* during these months, he thinks about one-fourth die; about one-fourth entirely recover; and about two-fourths, being the remainder, escape with life for the time, the disease changing into intermittent fever; and he had already stated the usual consequences of intermittent fever.

The number of the poor, who suffer during these months from dysentery, this witness thinks nearly the same with the number who suffer from intermittent fevers; and of those, thus suffering from dysentery, he thinks that not more than one-half escape with life—that the fatality is equal during other periods of the year among those attacked, but the number attacked is much fewer.

This account although it is stated to refer, as to the total amount of the number of persons afflicted with the complaints mentioned during these months, to a very unhealthy season, is not said, even as to this, to refer to a season of extremely rare occurrence—and as to the amount of the fatality, either immediate or consequential, in proportion to the number attacked, it purports to be merely a history of the events of every successive year. It is of importance to see how far this account is confirmed or dissented from by the other Medical witnesses who have been examined.

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Mr. Martin, in answer to the question stating Modoosoodun Goopto's former account of the four most unhealthy months, and the diseases then prevalent, replied that it was impossible to arrive at any thing like exactness, from the absence of all statistical information; but judging from the known effects of our climate on health, and from the ascertained amount of the population of this City, he should say the estimate made by Modoosoodun Goopto was considerably under the actual amount of sick poor. He says, that the number destroyed by those acute diseases must be very great, but we have no means of ascertaining them. Gastrick remittent fevers, commonly called bilious, he says, are very common and very fatal amongst the Natives. The intermittent fever is also very common, and though not primarily fatal, it is so on a large scale consecutively, by founding organic disease of the spleen, diarrhœa, and dropsy. He cannot answer the question, what proportions of the number of poor suffering under remittent and bilious fevers during the period from August to November in his opinion escape with life; but during this season the remittent fevers are far more prevalent than the bilious and intermittent. Dysentery, he says, is ever a disease of danger; and, when not treated, a very large proportion of the sufferers must die. In the Native the diarrhœa following intermittent fever, whether accompanied by tumid spleen or not, is a disease very intractable in its nature, and he believes very fatal amongst the poorer classes—so much so, that few can survive it without careful Medical management.

It appears to the rest of your Committee, that this evidence of this accomplished British Professor of Medicine, of so much practical experience in the diseases of this country, concurs so entirely in all essential particulars with that of Modoosoodun Goopto on his last examination, the two accounts being given upon different occasions, and without any communication between the parties, as to leave no doubt that Modoosoodun Goopto's account is essentially correct—and that the proportions which the different diseases bear to each other at the different

seasons, and the amount of immediate and consequential mortality, of all which he has from his practice among the Native poor, and his intercourse with them, better opportunities of judging than any European, are assigned by him with as near an approach to probable accuracy as is possible in the absence of every thing in the nature of statistical records.

Mr. Reid, who has been in practice for upwards of ten years among the Native poor of Calcutta, agrees that the four months of August, September, October, and November are at Calcutta the most unhealthy months in the year—that fevers, both remittent and intermittent, are more prevalent during these months—and though he has no sufficient information whereon to form a correct estimate, he is of opinion that the number stated by Modoosoodun Goopto, as affected with the diseases he mentions, is rather under than over-rated.

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Mr. Reid states the impossibility of obtaining, from the occurrences at a Dispensary, facts upon which to make a correct report of the success or failure of the practice which has been there applied to the diseases the subjects of it. He says that he has not facts upon which he could make a correct report, even upon the number of deaths in remittent or intermittent fever, or diarrhœa, or dysentery; “for patients at Dispensaries only take medicine so long as they please, and many remove from Calcutta to their Native villages, so that they are lost sight of, and the result remains unknown.”

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He says that remittent fevers are at all times considered as more dangerous than intermittent, and that the greater proportion of fevers during these months are of the remittent type, and are very fatal in their effects.

Mr. Ryper concurs entirely with Mr. Reid in all these particulars; and Dr. Stewart states fevers of the periodick type to be the epidemick of autumn both in Bengal and other swampy climates, whether tropical or not—that he cannot estimate the rates of these in Calcutta—that all diseases attended with fever, or consequent on fever, at these times, have a periodick character, but are not on that account less dangerous or fatal—that the remittent and bilious fevers from August to November in Bengal are very fatal, and all characterized more or less distinctly by *periodicity*. They are less fatal in proportion as the remission or intermission is greater, and medicines called *anti-periodick* are duly administered, or otherwise. Dysentery is the most fatal, and he thinks the most general, epidemick of the autumn months in Calcutta.

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On the 1st of May 1838, Mr. Martin addressed a Letter to the Chairman, in which he states that he had been endeavouring to ascertain, with some approach to accuracy, the proportions of sick to well amongst the Natives, with a view to test the correctness of Modoosoodun's estimate; but the total absence of any thing like statistical information on this head left the question where it was. He says, that in England it is estimated that 30 per cent. of the living are annually sick, and 3 per cent. constantly so; and he suggests that, if we double the latter, we may here perhaps approach the truth.

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Your Committee are of opinion, that, although upon the evidence there is no probability that the proportion of sick to well in Calcutta is so little as double that which it bears in England, it were vain to expect any thing approaching to certainty in such an estimate, until well regulated Hospitals shall be established, in which accurate diaries shall be kept, and the origin, character, progress, treatment, and termination of diseases shall be recorded with the care now exacted upon this point in the civilized countries of Europe, where a due degree of attention is bestowed upon the progress and the approximation to certainty of the Medical science.

Upon the vast importance to the preservation of human life, of the establishment of one or more well regulated Hospitals in Calcutta, in this view alone, as affording the only means of ascertaining the exact nature and safest mode of

treating tropical diseases, your Committee will presently express their opinion. But they think they have quite sufficient evidence, that during these four most unhealthy months, a vast proportion of the entire population labour under acute diseases intermittent, remittent, and what pass under the general name of bilious fevers, and dysentery—that of these a small proportion only are afflicted with primary intermittent fevers, the vast majority consisting of remittent and bilious fevers and dysentery; complaints which your Committee think it demonstrated are extremely dangerous, and accompanied with great and immediate prostration of strength—and that, of this vast majority so attacked by these severe forms of acute and rapid disease, an amount of persons among the poor fall victims to the absolute destitution of the means of obtaining Medical relief, which it were appalling to any man to think of, and which your Committee are satisfied cannot be contemplated by an Englishman without feelings of a peculiarly painful character.

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Mr. Reid indeed states, that, although he can give no general answer to the question, inquiring what proportion of the number of the poor suffering under remittent and bilious fevers from August to November in his opinion escape with life, yet with respect to subjects which have come under his immediate observation at the Dispensary, he can say, that not more than six or seven per cent. including those who come in the very last stage of the disease, fall victims to it.

Ibid.

Ibid. Answers to
Q. 2. Q. 5. Q. 7.

Your Committee have every respect for this gentleman's testimony, and they are persuaded he would not state what was not impressed upon his mind as a belief reasonably entertained. But they think this answer incautiously given—and they are unable to see how it can be reconciled to his immediately preceding and subsequent declaration of the impossibility of stating the proportion of mortality attendant upon the diseases treated at a Dispensary. It appears to your Committee, from all the evidence, perfectly certain that no such estimate as that here offered by Mr. Reid can lay claim to being more than a mere conjecture, from which it would be most unsafe to draw any practical conclusion.

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With regard to the following and less unhealthy seasons, also forming nearly one-third of the year, from December to the middle or end of March, Modoo-soodun Goopto says that he considers the months of December, January, February, and the first half of March, as the healthiest part of the year; but, if during these months there are changes of unusual warmth or moisture, they are not so healthy as they would otherwise be. During these months the prevalent diseases of the autumn do not frequently occur as new cases. Enlargement of the spleen, chronick inflammation of the liver, dyspepsia, diarrhœa, chronick dysentery, œdematous swellings attendant upon intermittent fever, continue with the intermittent fever during these months, if the fever has not been perfectly cured before. Jaundice, the consequence of intermittent fever, also continues.

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To the same purpose Mr. Martin says that intermittent fevers, spleen diseases, diarrhœas, and dropsies prevail much during the months of November, December and January—that many of these are the results of remittent fevers contracted during the previous rainy season—and that the number of deaths may be estimated at something more than one-third of all those labouring under the sequelæ of acute disease here mentioned—that after the season from August to November, the intermittents are the most prevalent, either as idiopathick diseases, or as sequelæ to the remittent fevers.

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Mr. Reid says that the remittent and intermittent fevers continue during December, January, February, and March; but not in any great degree. The diseases prevalent from December to the end of March are rheumatism and bowel complaints—he means particularly diarrhœa and dysentery.

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Mr. Ryper, from personal observation in a practice of upwards of twelve years among the poor of Calcutta, is of opinion that dysentery prevails mostly during the

cold time of the season—that during the months of December, January, February and March, the remittent and intermittent fevers continue, not to any great extent—that the diseases of these months are rheumatisms and bowel complaints, which are then more in number than at any other time of year, particularly diarrhœa and dysentery.

During this the cooler part of the year, therefore, when the annual drying process after the rains has terminated, it appears from this evidence that the amount of disease is less appalling—that rapid and violent fevers immediately dangerous to life, and depriving the patient of the power of quitting his house or his mat to seek abroad for Medical relief, form no longer the majority of the diseases which afflict the poor; but that the City can by no means be considered, as relieved from the scourge of severe disease, under which a large proportion of the population continue to suffer—that some of the more severe and rapid forms of fever remain—that other forms of disease, inflicting great suffering and prostration of strength, in itself constituting to the labouring poor great danger to life, and attended with the certainty, if not treated with Medical skill and adequate remedies, of a fatal termination, prevail—that the great majority of the diseases of the cooler months are the consequences of the absence of all due provision for the treatment and cure of the diseases of the preceding rains and drying season, which have been left without resistance to do their work of immediate slaughter upon the great majority of those whom they have attacked, and to implant in the rest the seeds of certain and not distant dissolution.

Your Committee think it difficult upon this evidence to come to the conclusion, that the amount of constant disease is less—that is, that the number of cases daily subsisting which require Medical treatment, and which if not medically treated are sure to terminate fatally, with greater or less comparative rapidity, are fewer—during the cool season, than during the late and subsiding rains, and the drying season which precedes it, although the diseases of the cool season are less severe and rapid in their progress, and consequently the amount of mortality during the period is not so great. They think, therefore, that the demand for Medical aid to be afforded to the poor is equal; but that in the mode of its distribution more, probably, may be done during the cool than during the preceding season, by medicine and advice administered at Dispensaries to such as have strength to go and seek them there; but there are two observations relative to the cool and least unhealthy season, which are very important in considering the necessity, with reference to the diseases of this season, of establishing Hospitals. *First*, That the great majority of the diseases of the cool season are the consequence of the imperfect cure of the severe diseases of the preceding season, which it will appear from the evidence to be presently referred to, are capable of perfect cure among the poor only in an Hospital; and, *Secondly*, that remittent, and other fevers besides intermittent, though less in proportional number, have not ceased; and that the majority of the cases consist in dangerous affections of the bowels, diarrhœa, and dysentery, of which it will appear that it is at least doubtful whether they can be safely treated among the poor except in an Hospital, and certain in their later stages that they cannot.

The remainder of the year, which includes the hot season and the beginning and middle of the rains, from the middle or end of March to the beginning of August, is said by Mодоооодун Goopto not to be generally unhealthy. But he says that in some years it is very much so in some respects—that when the heat is excessive, and there is a deficiency of rain, there is generally much cholera and diarrhœa, some dysentery, and some bilious fever, much small-pox and chicken-pox and measles—that the cholera when it prevails is generally very fatal among the poor—that it is very frequently fatal among the rich, but of the poor few

escape that are attacked with it, for want of proper assistance—that intermittent and remittent fevers are not common in these months.

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Doctor Stewart says, that dysentery and cholera prevail occasionally with violence at this time, but in a different form; not as the consequence of previous fever, but primarily, and in an acute, and perhaps more manageable form.

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Mr. Reid is of opinion that during the four months from April to July the diseases of intermittent, remittent, and bilious fevers, and dysentery, and cholera, continue more or less; with what proportion of mortality he has no means of stating.

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Mr. Ryper says, that to the best of his opinion, cholera and small-pox are the most prevalent diseases during the months of April and May; fever, remittent and intermittent, and dysentery, from April to July in a great deal lesser degree than at any other time of the year. With respect to mortality, he has no sufficient proof upon which he could make a correct report.

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Mr. Martin in his answer to the last question put to him on the 15th of April, gives a short, but extremely distinct account of the various states of disease at Calcutta during the different periods of the year. The period from August to November he describes as having always been observed to be the most unhealthy, but the applicants for Out-door relief at the Native Hospital are nearly equal throughout every month of the year. As In-door patients, the worst cases of acute remittent fever and dysentery are admitted from the beginning of July to the end of October. Then come the sequelæ of those two acute diseases, intermittent fevers, enlargements of the spleen, diarrhœa, dropsy and various forms of dispepsia. These diseases, he says, are all seriously aggravated by the cold season. The season when both Natives and Europeans suffer least from disease is from the beginning of February to the setting in of the rains; but even then the largest Hospital could be filled with the sick poor; for they can only be said, even in this favorable season, to be relieved in some degree from suffering, in consequence of the equable determination to the surface of the body, occasioned by the increasing and dry heat.

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On a subsequent examination, Mr. Martin said, in answer to a question asking whether he was able, in the absence of statistical and Medical records, or other means of ascertaining the facts with accuracy, to form from his knowledge of the climate and locality, and his Medical knowledge and experience generally, an opinion of the probable proportions of the different fevers, dysenteries, and acute diseases among the poor Native inhabitants of Calcutta and the Suburbs during the most unhealthy months, or the other parts of the year, he answered, that, without any violent deviation from a probable approximation to truth, he should say that during the rainy season, or from the beginning of July to the end of October, the proportions of remittent fever and dysentery may be said to be equal, or nearly so—intermittents being uncommon, or in very small proportion, during that season. During the cold season, on the other hand, intermittents and diarrhœas nearly exclude the diseases of the rainy season. There is a continued form of fever peculiar to the cold season also, which, when neglected, assumes many of the characters of European Typhus, and is then frequently fatal. He said he was not able, with any thing like an approach to correctness, to say what proportion the number of cases of acute disease during the eight remaining months of the year bear to those of the four most unhealthy months, which have been stated by Modoosoodun Goopto at 18,000; but his opinion was, that the number of acute cases during the eight remaining months far exceeded that stated by Modoosoodun Goopto as occurring during the rains.

There appears to your Committee no ground for thinking that the amount of Medical care required by the poor during March, April, May, and June, is

materially less than during the cold season, or is materially different in its nature; and your Committee think there is evidence to shew that there is no such difference in either of these respects, during any part of the year as to vary, except to a limited extent in comparative amount, the nature of the provisions which must be made to save the lives of the sick poor; but that a demand upon Public charity for administering to the Medical necessities of the poor will be found to exist in Calcutta at all times, and in every way, both within the Wards of an Hospital and by the auxiliary means afforded by Dispensaries, which, in the present insalubrious state of its Drainage, Sewerage, Ventilation, and supply of Water, is beyond what there is any possibility of meeting; and which, when the proposed improvements shall have reduced the amount of disease within bounds, less appalling and more manageable, will be found equal to all that there is any probability of being able to command.

Mr. Martin has furnished your Committee with a Return of the number of Out-door applicants at the Native Hospital Dispensary for relief in each month during the six years ending August 31st, 1837. The nature of the cases, and how many are original, and how many renewed applications in the same case, are not mentioned. The latter, he states in his evidence, it would be impossible to distinguish. The Table, therefore, only shews the comparative number of applications in different months and years; and in shewing this, it may be taken to shew very accurately not the actual, but the comparative number of cases in which application for relief was made by such as were able to go there to seek it.

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The results of this Table, combined with what is known of the relative state of healthiness of different periods of the year, and the prevalent diseases at different seasons, are very striking. It is universally admitted, and might be inferred from the general and ascertained principles of local salubrity all over the world, that in Calcutta and its neighbourhood the most unhealthy period is from August to November, the least unhealthy, from December to March. The average applications at the Native Hospital for Out-door, or Dispensary, relief during the six years above mentioned, have been during the four months from

August to November,	26,690
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During the four months from December to March,	25,390
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being a little more than one twenty-sixth part less—not one-fourth per cent.

The average applications during the remaining four months from

April to July, have been,	26,228
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not a great way short of those during the most unhealthy months.

The average applications in each of the most unhealthy months

have been in August,	6,574
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September,	6,753
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October,	6,476
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November,	6,885
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whereas the average of March, supposed the healthiest month, has

been,	7,142
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and of July,	7,129
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Mr. Martin, in a Note appended to this Return, says that the explanation he "would offer on the fact of one of the healthiest months of the years, March, being the one exhibiting the greatest number of applicants, is this—During the rains, and the drying process of the soil immediately subsequent, the Bengallees are kept in their huts by the force of acute disease: in the cold season, they are sufferers, in perhaps a severer degree, from internal congestions, the result of the total drying up of the surface of the body. They are seen in hundreds exposing themselves to the sun, as a means of relieving the benumbing effects of the cold damp nights. During the increasing temperature again of February, March, and

April, the equable determination to the surface relieves the tumid spleens, and other internal congestions, and restores suppleness to their rigid limbs. It is thus I would account for our having the greatest number of applicants during the healthiest season; and, if I am correct in my opinion as to the cause of the apparent anomaly, it affords a melancholy view of the state of Native health throughout the year." "It would appear that the poorer classes suffer in nearly the same numbers at all seasons, and that the only important difference consists in the greater intensity of the diseases of one season as compared to those of another."

Your Committee entirely agree in considering this at once the most natural, and the only possible conclusion from this very striking fact. But they would also remark, that the number of applicants in July, may probably be accounted for from the acute disease having then commenced, or threatened so to do; but not having yet, in all cases, deprived the sufferer of the power, which during the subsequent months he loses, of presenting himself at the Dispensary. Be this however, as it may, the great equality in the number of applications at all different periods of the year, knowing as we do the wide difference in their insalubrity, and in the number and nature of the diseases which prevail, amounts, in the opinion of your Committee, to a demonstration, that the number of cases in which Dispensaries can administer relief, whether more or less effectual, remains, in the present state of Calcutta, nearly the same at all seasons of the year; and that the cases, which we know to increase in so great a degree the amount of disease at the more unhealthy times of year, are composed entirely of such as disable the sufferer from applying to a Dispensary for relief.

The additional evidence which your Committee has obtained in regard to the diseases and the modifications of them, in which Dispensaries for the distribution of medicines along with suitable advice at the Dispensary, can afford adequate relief, concurs entirely with the evidence upon the same subject adverted to in the foregoing part of this Report. The chief diseases requiring Medical treatment, all of which are prevalent in Calcutta at all seasons of the year, but in different proportions in the different seasons, are intermittent fever, remittent fever, gastrick remittent or bilious fever, and other fever of this description, periodical more or less, or continuous, as modified by circumstances, passing under the general name of bilious fever, dysentery, cholera, diarrhoea, and minor complaints of the bowels, dispepsia, dropsy, jaundice, disease of the liver and spleen, hooping cough, small-pox, measles, and various eruptive diseases.

Your Committee cannot conclude their account of the evidence they have obtained, upon the great Medical question they have inquired into, without calling your Honour's attention very particularly to one most important object in the advancement of Medical science, which is attained by the establishment of Hospitals for the treatment of medical cases, and attainable by that means alone—namely, the placing upon a footing of some certainty the science of *Medical statistics*, or the knowledge of the prevalence under particular circumstances, the duration, stages, and extent of mortality, of different diseases—the extent to which these are lessened by treatment and remedies of different descriptions—the classification of the ages, modes of life, and professions of patients—and the treatment most efficacious, and rates of mortality most prevalent, with reference to these particulars—in short, all the *facts* connected with medical diseases. The importance of an accurate knowledge of these facts, not to the science of medicine alone, but to some great political objects, and objects of great concern in civil life—its entire dependence upon the extent and accuracy of the records of well conducted Hospitals—and the absence of any thing approaching to it, and consequently of all certainty upon these interesting subjects, within the Indian Empire of Great Britain—have been well brought to the attention of your Com-

mittee, in a Letter from Mr. Martin to the Chairman, of date the 1st of May, 1838, already in part referred to.

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Upon this evidence your Committee is of opinion,

I. That there is the most urgent necessity for the taking effectual measures to administer relief to the sick, within Calcutta and its Suburbs, in a state of poverty, but not of utter destitution.

II. That Dispensaries for the gratis distribution of medicines, under the advice of an Apothecary, and the general superintendence of a Surgeon of the establishment, are attended with very beneficial effects in a large description of cases, especially when the patient is persuaded by an European master or mistress, or judicious Native friend, to apply for relief in the early stage of a common disorder, and in slight and in chronick diseases; but that they by no means answer the desired purpose, or in the opinion of your Committee any good purpose, in acute or dangerous diseases, which have proceeded beyond the initiatory symptoms—which diseases appear to form a large proportion of those prevalent in Calcutta.

III. That, in order to the successful treatment of these diseases among the poor, an Hospital, or Hospitals, must be established, in which the patients can be received to sleep and to live during the progress of their cure—in a situation removed from the neighbourhood of a dense population—having well ventilated apartments raised above the lowest strata of morbid exhalation, and the noxious damps, which render their ordinary habitations the necessary and chosen abodes of disease; and secured by substantial walls and good roofs against the sun and the rain, and the sudden and violent alterations of temperature incidental to the climate—in which they may receive the daily advice of a skilful Physician—and the constant attendance of a well instructed Apothecary, and of assistants and nurses of competent knowledge and care—the ceaseless watching of the progress of the disease, and of the effects of the medicines taken—the benefit of strict measures to ensure the proper administering of the medicines ordered—proper attention to cleanliness and clothing—the due supply of wholesome food and regulation of diet—and a supply of such articles of sustenance, as from their mode of preparation, or rarity, or expense, cannot be procured by the poor except in an Hospital, and may be necessary to recovery.

IV. That the Police Hospital is only accessible to the entirely destitute, who are found helpless and houseless in the Streets, and who are carried there as a matter of police by its officers.

V. That the Native Hospital being intended for Surgical cases, its accommodation for Medical cases is necessarily very limited; and their admission is not free from inconvenience, with reference to its principal object. It affords, therefore, hardly any means of supplying the want of a General Hospital.

Your Committee cannot express too strongly their sense of the reproach justly incurred by the British inhabitants of Calcutta—they trust they may be excused for saying, as well the Governours as the Governed—from the want of any such general Institution; in which reproach the wealthier of the Native inhabitants justly partake, though in an inferiour degree, considering the circumstances to which they have for ages been subjected, to the extinction of publick spirit, and of much of the natural sympathy with distress, when it exists beyond the circles of family or caste. From this reproach your Committee hope the Government and the inhabitants are about to be rescued, by the liberal and judicious consideration on the part of the Government, which has encouraged, and given a practical and efficient form to the present inquiries, and by the contributions, both publick and private, which your Committee look forward to with sanguine expectation as their result.

VI. That the establishment of a Lying-in Hospital, or Lying-in Ward, attached to a General Hospital, under the immediate, and constant care, and controul of a well educated European Physician, or Surgeon, and the instruction, in such Hospital or Ward, of Native midwives, by an European Professor of Midwifery, is one of the measures the most urgently called for, if it be desired to preserve the lives of Native mothers from the most merciless destruction, or to rear their progeny in a healthy state. And your Committee are of opinion, that there is no reason to doubt, upon the evidence, that Hindoo married women of inferiour castes would readily resort to such an Hospital—that such educated Native midwives would soon be extensively employed by Native mothers of the higher castes, and ranks, to attend them at their own houses—that customs, in regard to lying-in women, apparently universal among the Hindoo population, and in a high degree dangerous to the life of the mother, and greatly injurious to the health of the child, but not founded upon any religious opinions, or precepts, would, in the course probably of no very great length of time, be eradicated—that much of the present ignorant, and destructive treatment of Native mothers in child-birth, of all classes and descriptions, would give place to a judicious abstinence from interference with the efforts of nature, and a careful providing for the health of the mother, and the child—and that many lives might thus be saved and much ill health prevented, among the Native population of Calcutta.

VII. That the establishment of such a General Hospital, so near to the Medical College as to admit of clinical lectures being delivered at the bedsides of the patients by the Professors, without requiring from the Professors or Students so long an absence from the College as to interrupt the course of other studies, is essentially necessary to render that Institution of any real, and practical use, as a School of Medicine—and that the attaching a Lying-in Ward to an Hospital so placed would greatly add to the usefulness of the College as such school.

VIII. That the persons requiring to resort to such an Hospital for relief in cases of fever, and other general diseases requiring Medical treatment, would consist of four different classes. 1. Poor Hindoos of low caste. 2. Poor Hindoos of higher caste. 3. Poor Mussulmans. 4. Poor Christians—and perhaps Jews—and strangers of different persuasions not Hindoos or Mussulmans. That the first third, and fourth classes would, according to the evidence as weighed by your Committee, readily resort to such an Hospital, after the lapse of as short a time as would be necessary, in any other part of Her Majesty's Dominions, to obtain for such an establishment the confidence of the labouring poor, and in such numbers as to fill, and keep filled, an Hospital or Hospitals, capable of receiving 250 patients, or even a considerably larger number; by which many lives, and much misery and destitution would be annually saved—that these classes would make little, or no objection to the presence of as many of the pupils, during the time of the proposed lectures, as could be conveniently admitted so near the patient as to profit by the lecture—and that the prejudices of custom, and caste, existing in the second class against Hospitals generally, are not founded, in any great number of instances, upon observances which they consider essential to the purity of their caste; but are capable of yielding, and likely to yield at no great length of time to experience, to the suggestions of the better informed, and to the love of life and health—and that the prejudices of this class do not extend to the necessary exclusion from the bedside of the patient, when visited by the Physician, of a small number of pupils, as five or six at a time, especially if of his own country and religion.

IX. That from the evidence your Committee see no reason to apprehend, that, among the lower classes of females, Hindoo and others, who would resort, as your Committee are led to believe, in considerable numbers to the Lying-in Ward, any such repugnance to the presence of the students, under proper re-

gulations, and in such numbers only as experience should lead the Professor to admit, would exist, as to render that Ward incapable of being employed as a School of Medical observation, and practice, in that very important branch of the science.

X. That an additional number of Dispensaries, established for the distribution of medicines, and advice, in that numerous description of cases to which the relief afforded by Dispensaries is applicable, and so placed as to afford to the poor, in every locality within the City and Suburbs, easy access to a Dispensary when they require it, is highly necessary, from the extent of the City, and the great amount of its poor population.

Your Committee having ventured to express their opinion upon the apathy shown, both by the Government and the inhabitants, up to the present period, in regard to the establishment of a General Hospital, cannot refrain from bearing their humble testimony to the wise liberality, which the Government has displayed, in the gratuitous supply of medicines to the poor, the care bestowed in providing them, and the maintenance of the Police Hospital, and the Lunatick Asylum, and their liberal contribution to the maintenance of the Native Hospital, and the Dispensaries subordinate to it. But it is the duty of your Committee to state, that, without a great extension of the means provided for the relief of the sick poor labouring under diseases requiring Medical treatment, by the multiplication of Dispensaries, as well as by the establishment of an Hospital or Hospitals, the humane intentions of the Government will continue to be effected in a very imperfect manner, and to a very limited extent.

Your Committee are painfully aware, that to cope with the vast mass of disease which prevails in Calcutta in its present state, in the hope of administering effectual relief by charitable means, in cases bearing any but a small proportion to the multitude which demand it, were an undertaking certainly beyond the means of private contribution; and probably beyond those which the paternal providence of the Government could command for such an object, great as that object undoubtedly is. But they cannot think, that, because all cannot be at once accomplished, which is ardently to be desired, nothing should be attempted towards accomplishing a part, where that which is to be undertaken regards the saving of human lives. In a shipwreck, what is to be done is to save as many as there are the means of saving; nor were any man's exertions to effect this ever relaxed by the consideration, that their number was small, compared to those who must be left to perish. As is well observed by Mr. Martin, "This need not discourage us; for, in countries the most civilized and wealthy, it is but a small part of the suffering that is alleviated by Hospitals, or that can be so. If the more urgent and acute diseases are treated, a great deal is done to relieve suffering, and to save life."

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But taking the sick during the most sickly season to be truly estimated at the appalling number stated by MODOOSOODUN GOOPTO—and there is now further evidence that his calculation is not exaggerated, but the contrary—a considerable part of the whole number are afflicted with intermittent fever only, and not in so severe a form as to disable them from personally applying for relief at Dispensaries. It may be necessary, and not altogether hopeless, to leave these cases at present, if not for radical and perfect cure, at least for alleviation, to such relief as can be afforded from Dispensaries, and for essential diminution in their number and recurrence, to the removal of the great causes of disease, by the contemplated improvements in Drainage, Cleansing, Ventilation, and the supply of wholesome and abundant Water, which improvements have been attended with these consequences in other places equally unhealthy, and in the same respects, before such improvements were made.

It is also proved, that intermittent fever is frequently the consequence of the more immediately dangerous remittent, where the latter has been imperfectly cured, but the patient has escaped with life ; and that consequently the number of intermittent fevers will be thus diminished by the extended application of suitable means of cure to remittent fevers. It may, therefore, result, that the cases of acute disease demanding Hospital treatment, as remittent and bilious fevers, and severe intermittents, dysentery, &c. may not appear so utterly overwhelming in point of number, as the amount of disease prevailing, when viewed without distinction, and in the mass, most assuredly does. It is also proved, that such is the rapidity with which these acute and immediately dangerous diseases yield to judicious and careful treatment, when their progress to an equally speedy, but fatal termination is arrested, that ten or twelve days of Hospital treatment may be allowed as an average for the cure of each case. Taking it at ten, an Hospital containing 200 beds, would thus be capable of receiving and discharging 600 patients labouring under these acute diseases in every month, or 7,200 patients in the year. If the Hospital should contain 250 beds, it would be capable of receiving and discharging one-fourth more, or 750 in every month, and 9,000 in the year—a number no doubt small compared to the number of those afflicted—but a large number of persons to be annually rescued from the certainty of death, and placed where each is within a reasonable hope of recovering, and where it is certain that the great majority will recover.

The establishment of such an Institution, therefore, if united to a vigorous and persevering application of the known means of subduing the local causes of unhealthiness, would not leave it hopeless, in a reasonable time, to reduce the number of cases of acute disease generally to what might not exceed the number usually incidental to the same amount of population, in places not remarkable as the seats of endemick disease.

Your Committee proceed now to call your Honour's attention to other minor causes of disease, and obstacles to convenience and improvement, concomitant with its deficiencies in these the most important respects, and which at present abound in it ; and also to the lamentable state of the Suburbs.

One of the most material of those concomitant obstacles to health and convenience in the City is the prevalence of insalubrious vegetation in the Town, and its neighbourhood. Of this prevalence in the middle of the Town upon the banks of almost all pools or holes, and even on those of several of the Tanks, and in many little spots, and in some spots of larger extent, in the shape of rank jungle or wild vegetation, they have evidence in the answers of several of the Natives to the questions circulated ; and Mr. Abercrombie states that there is a quantity of unhealthy jungle in many parts of the Town growing on private property, which it appears he apprehends the Publick officers are not entitled to cut down without permission. He says, there are also green and unwholesome Tanks and Ponds, private property, useful to the proprietors, but very unhealthy, and nuisances in that respect ; and cocoanut and other trees, which obstruct the passage of several of the smaller Streets, having their stems and branches projecting over the Road, and their roots in ground which is private property—that the proprietors would oppose the cutting of this jungle, or filling these Tanks and Ponds, by main force in the first instance, and he says “ they would bring the law down upon us in the next.”

Captain Forbes to the same purpose states that unhealthiness is occasioned by bushy trees and jungle in his neighbourhood—and that two-thirds of the trees in and around Calcutta and Chowringhee ought to be cut down—and that rank jungle and wild vegetation is found in so many quarters as to render their separate specification impossible. The number of ruins and dilapidated tenements in

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different parts of the Town are also a source of great unhealthiness and danger—and along with this is to be noticed, the filth, obstructions, and nuisances which infest the Streets.

Of there being many houses in different neighbourhoods in a dilapidated state, some of them uninhabited, and in a state injurious to health, being receptacles of filth, and grown up with vegetation, and which often become common privies, and into some of which cattle frequently crawl to die—there is abundant evidence in the answers to the questions circulated by your Committee.

Mr. Abercrombie bears testimony to there being at present no effectual means in use for putting the Streets into a proper state of cleanliness, and preserving them in such—that dust and rubbish and all kinds of dirt are thrown into them *ad libitum* from every house, to be picked up, as may be, when the carts of the present very inefficient establishment may happen to come round—that Markets are kept in the middle of some of the publick Streets, and the Streets thereby stopt up, and dust and dirt accumulated upon them, and the side Drains stuffed with it—that there are no sufficient means provided for the removal of ruined houses, numbers of which in the Native part of the Town, built of brick and mud cement, fall after every heavy shower of rain—that it is usual for the Magistrates, on receiving a report that a house is in a ruinous and dangerous state, to serve a notice upon the proprietor; but these notices are rarely attended to, and the Magistrates, according to Mr. Abercrombie's opinion, have no power to punish the neglect—that he knows of no power in the Magistrate to compel the proprietor to take down or repair a building in a dangerous state; and he knows that if such power exists, it is never put in force—that the consequence is, the ruins fall, obstruct the passage of the Road, also of the Drains, which is productive of excessive inconvenience during a heavy fall—that the ruins sometimes fall into other people's grounds and block them up, and sometimes destroy the property, and the proprietor has no redress but an action—that he has heard of people being killed by these ruins falling upon them—that the ruins are usually removed by the Conservancy, and used for metalling the Roads—that the only punishment ever inflicted on the owner is taking away the bricks, unless the publick Drains or passages are obstructed by the fallen rubbish—that during the very heavy fall of rain in the beginning of October 1836, he had not less than twenty-five or thirty reports of different buildings having fallen, or being in such a state as to be ready to fall.

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Mr. Tweedale, Overseer of the Upper North Division of the Town states, that there are many houses in that Division in a very ruinous condition—that in every rainy season houses fall, and sometimes persons are killed by this means, and sometimes others are severely injured—that most of the people are very much averse to pulling down old houses and walls, even when they have the means, and the danger is imminent—that one great cause of injury is the allowing trees to grow out of the walls from seeds or roots accidentally lodged in them, which the people have a prejudice against rooting out—that most of the owners of houses in a ruinous state have been served with notice, but that it is in very rare cases indeed that any attention is paid to such warning—that he does not remember one instance of these notices being enforced—that he knows of one instance of the owner being fined, he thinks by the Magistrate, where persons were killed—that he never knew another instance of the party being fined—that he has not known many instances of people being killed, but has of many people being hurt—that the Magistrates do summon and fine where Drains are stopt, or the Road impeded by rubbish, unless it is speedily removed—that he had never heard of any survey made by order of the Police to find out houses that are in a dangerous state—that it is his duty, as he considers it, to report such as he observes

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in a dangerous state, and that he has known the Superintendent examine such houses as he has reported ; but he never saw any repairs made by order of the Magistrates in consequence—that he never knew it to his recollection done in opposition to the will of the proprietor.

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The belts of bamboo in the neighbourhood of the Town, and the rice cultivation, and the jungle, trees, and underwood, obstructing ventilation in the Suburbs, and the rank vegetation lining great stagnant ditches in part of them, are stated by Mr. Martin, as among the prominent causes of the unhealthiness of the Town.

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Dr. Vos (late Surgeon to the Calcutta Police) states in his Note to Mr. Martin's address, communicated to the Governours of the Native Hospital, and printed with their Proceedings, that after the personal observations which he had made in several parts of the world, including Walcharen and Batavia, he could freely say, that there was no place he had visited where fever abounded so much, and where its progress was so quick and fatal, as in the lower parts of Bengal—that his long residence in Calcutta, and the opportunities his professional and publick duties afforded him of visiting the Suburbs, had given him an insight into the state of health prevalent amongst the lowest orders of the Natives, as well as amongst the higher and middle classes—that this certainly was very bad, but it was surprising that it was not a great deal worse, when we considered the climate and situation, besides their own mode of living, accustomed to the extreme of filthiness ; for though they preserved their persons clean by constant ablutions, yet they disposed of all kinds of filth and dirt by throwing it into their compounds or into the adjacent Drains, where it was left to produce noxious effluvia—that this contributed to the unhealthiness of the place, and was the very seed of those malignant fevers to which the lower orders were so universally subject, and which were followed by the chronick and fatal diseases, dysentery, diarrhoea, and spleen—that the Suburbs required much improvement ; and as long as this object was unaccomplished, Calcutta could not be healthy, it being surrounded with jungle on all sides except the River—that the Suburbs of Calcutta were full of dirty Pools, with no sufficiently large Tanks—that he would only add, that there was continual sickness in most families except those who lived in upper-roomed houses.

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Dr. Jackson's Note to Mr. Martin's address, also printed with the said Proceedings, states that whatever other morbid affections we may annually calculate upon, we may always rest assured of the prevalence of fever amongst the Natives—that the mortality from this source he knew to be very great.

Along with this Note Dr. Jackson sent to Mr. Martin a set of hints, sketched by Ramcomul Sein, at his suggestion, containing, he says, their ideas on the subject, and which he hopes will prove serviceable, as exhibiting the feelings of the Natives.

In this Paper, entitled, "Observations by Baboo Ramcomul Sein and Dr. Jackson," and which is signed by the latter, it is said, that fever is unquestionably the most prevalent complaint in and about Calcutta—that the causes are very ably stated in the Paper by Mr. Martin—that the following may be stated as amongst the various causes productive of fever.

1st. Want of Tanks in different parts of the Native Town to supply wholesome water for drinking.

2d. Accumulation of Filth and stagnant Water.

3d. Shallow Tanks with unwholesome Water.

4th. Digging Pits and Holes, and leaving them open.

5th. Drains.

The great want of wholesome Water, and its effects, as stated in this Paper, have been already mentioned. Upon other causes of insalubrity it states, that in

the Suburbs of Calcutta, the water does not find its free passage from the Drains ; and amongst crowded Gardens, full of marshy places surrounded by jungle, the free circulation of air is prevented, while the decayed leaves and vegetable substances thrown into the stagnant water create malaria, and produce fever—that few of the labourers, peasants, and poorer class of people living in the Suburbs escape its effects—and even the higher class of people are attacked with it, and a large portion of them fall victims to it.

Mr. Abercrombie states, that there are in many parts of the Town water-spouts which project a foot and a foot and a half, and throw volumes of water from the flat roofs on to the road, and dig deep holes in it—that these he cannot get removed, although the remedy is simple, to carry the water pipes down the wall into the Drain.

Upon the subject of the Regulations of the Police, and the enforcing of the Laws for the Prevention of Nuisances. Mr. Abercrombie being asked whether there were no existing means of preventing the throwing of dirt and rubbish into the Streets, answered, that there were the Bye-Laws, which, on this subject at least, had fallen into disuse—that he meant they were not enforced—that, under the present mode of dispensing the law, he would not bring a man up before a Magistrate for throwing out upon the Road the common dirt and refuse of his house ; because it would be of no use—the answer he should receive would be, that every one in Calcutta did it—that as to water-spouts projecting, he reported one house, a very bad instance, but as he had reason to believe the spouts had been erected beyond the very short time limited by the Bye-Law, he could not get them removed by the Magistrate. Upon occasion, however, of his subsequent examination, on the 15th of January, 1838, he desired to correct his evidence in this respect, and stated that the Bye-Law does not prevent the removal of spouts after any period, but that spouts injuring the Roads are nevertheless common in the Town. Their being so, therefore, does not appear to your Committee to be owing to the want of a prohibitory Bye-Law.

Upon his original examination Mr. Abercrombie went on to state, that the Overseers of the Roads were extremely timorous about acting, even under an order of the Magistrate, in removing nuisances—that they said they were afraid of being prosecuted. And being asked, whether, when these persons were so ordered to abate nuisances, they were not guaranteed against the consequences, he said they had the Magistrate's written order, generally signed by the initials of the Magistrate. And being further asked, whether the orders were not formally drawn up and signed by the Magistrate at length, authorizing the removal of nuisances *via facti*, he said, that a report was made of an encroachment, and an order was endorsed on it, "remove," or "summon," and signed by the Magistrate with his initials. And being asked, whether this was all the written authority delivered to an Overseer, when he was directed to remove property supposed to be a nuisance, he said that it was—that a record was made of it in the exact words in which it was written, the initials being copied—that the fact was, that the Overseers would never remove a wall or other permanent nuisance upon those orders—that they would only prevent it from being carried on.

In the Letter addressed by D. M'Farlane, Esq. the Chief Magistrate, to the President and Members of the Municipal Committee, he says; that he observes some stress laid upon the subject of petty encroachments in the Town—that he is not aware of the existence of any, which might not summarily be removed by six weeks' vigorous administration of the laws we have at present—that the Judicial Branch of the Conservancy had long been on an unsatisfactory footing—that a Magistrate for some years attended twice a week for an hour or two to decide the petty cases that were brought before him—that again an unpaid

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Magistrate attended for some years—and that latterly the principal weight of the Judicial business had fallen upon Mr. Blaquiere, *as officiating for Rajah Radakant Deb*—[what the meaning is of this expression is not explained] that all that was required was, that Government should declare, (as recommended in his Report of 1834) that the Conservancy Judicial Department be abolished, together with the Conservancy Sirkars, and that the Overseers, acting under the Superintendent, should bring forward to the Division Magistrates all cases requiring notice—that some additional power they certainly required, that of dealing with the publick Tattacs (privies) situated on private ground, and pulling down ruinous houses; but the jealousy of the law of England against the infringement of private property would probably there interfere.

The removal of the Markets and Slaughter-houses to the outskirts of the Town on the River bank, and the constructing them on more approved principles, their having a free water-course, and being paved and rendered in every respect more cleanly, are noticed by Mr. Martin in his Note on the Medical Topography of Calcutta as improvements necessary to the salubrity of the Town. He states also that no Burying Ground ought to be allowed to be in use near the Town—that the Native one off Lower Circular Road should be closed, and brought into cultivation as soon as possible—and that he has known it complained of by persons residing in the neighbourhood.

Into these things, as well as into the state of Privies, both publick and private, and into the attention bestowed and means employed to remove carcases of dead animals found in the Streets, or thrown there by the proprietors, your Committee have inquired by the questions circulated among the inhabitants, and put to some of the witnesses they have examined.

In the replies to the questions circulated, they find abundant complaints made of the state of the Markets, or Bazars, in which Fish and Vegetables are sold, chiefly for the use of the Natives, and in which no Butcher's Meat is exposed to sale. Almost all are said to be offensive to the neighbourhood, from not being kept clean and in good order; and this seems particularly the case in the rainy season. It is said of one Market, that fisherwomen and sellers of fruit and vegetables are allowed to open their shops daily on parts of the publick Road, and that much inconvenience is thereby felt by the Publick. One Market, which is stated to be believed by the Reporter to be kept clean and in order, is said, nevertheless, *not to be free from the offensive smell of rotten fish*. Of others it is said, *that they are not more offensive than the common Bazars of Calcutta*, which, with few exceptions, want great improvement. Of some, which are said to be kept in order, it is added, that *any man who passes by them is sure to inhale bad odours*.

Modoosoodun Goopto says that the Native Bazars, which are for Fish and Vegetables, are very dirty, and full of putrid fish and vegetables—that they are not *pucka* (i. e. the Drains are not bricked) and the provisions are generally bad.

Your Committee has not instituted a particular inquiry into the state of the Markets for the sale of Butcher's Meat, they being few in number, and your Committee being of opinion that this, along with various matters of detail in Municipal Improvement, will form the proper subject of future investigation, and suggestion, by such body as the Government shall think fit to appoint with a view to these things. But they have sufficient evidence before them to enable them to report generally of all the Markets—that, although some of them appear to be kept in somewhat better order than others, they are satisfied, from the general nature of the evidence, that there are few, if any of them, whether for the sale of fish and vegetables to the Hindoo population, or butcher's meat and other articles to Europeans and others who eat butcher's meat, which are in a state such

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as ought to be permitted in any well regulated City, and more especially in a climate like this ; or a state which is at all consistent with the health and comfort of the inhabitants.

In particular it appears that the whole charge and responsibility of keeping the Markets clean rests with the owners of them ; nor is there a hint given, in answer to the queries put, of the Police ever interfering in the matter, where this duty, as is generally the case, is neglected ; except what seems to be implied in Mr. M'Culloch's answer, and is said by Mr. Green. Mr. M'Culloch, the Overseer of the Second Division, answers distinctly, that there is no person employed whose duty it is to see that the Markets are kept clean, although he considers such a person absolutely necessary ; as it would relieve the Overseer much, and enable him to confine his duties exclusively to the Drains and thoroughfares. And Mr. Green, of the Third Division, says, that he is not aware that there is any person entertained for the especial purpose of seeing that the Markets are kept clean, and he inspects them himself occasionally in his Division. And Mr. Campbell, of the Fourth Division, says, that it is the business of every Overseer to see every Market in his Division kept clean.

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It appears to your Committee, that, although this may be the duty of the Overseers, it is one, which is very imperfectly performed in any part of the Town, and which it is distinctly in evidence before them, in the case of the vast majority of the Markets, is not performed at all. Neither, in the opinion of your Committee, is it possible that the Overseers, in conjunction with their other duties, where filth and other nuisances are so abundant, and the means of removing them so deficient, and the construction of the Markets so imperfect, should be able to discharge this duty likewise in the manner which it requires.

But the want of cleanliness, and of the removal of putrified matters, is not the only material defect in these Bazars for the sale of provisions, intimately connected with the health of the inhabitants. Modoosoodun Goopto says of the provisions generally, that they are bad in the Bazars—that the shopkeepers cheat in rice, dhall, ghee, &c. by mixing—that this is known to the purchasers—that many would give a good price, but they cannot obtain unadulterated provisions—that sweetmeats are bad and unwholesome—the old mixed up with fresh, &c.—that he thinks the unwholesome food of the inhabitants is a great cause of their diseases—that new rice is mixed with old, which is very unwholesome, the rice being difficult of digestion—that there is no difficulty in detecting the adulteration of rice by washing, but the purchasers do not generally take that trouble—that it would not be at all difficult for the Police to detect such fraud.

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Upon the state of the Burying Grounds your Committee has obtained but very little information. These appear to be very few in number, and they do not appear to be complained of, except that one referred to, as above-mentioned, by Mr. Martin in his Note ; and except that Mr. M'Culloch, the Overseer of the Second Division, states that there are two Burial Grounds in his Division, the Armenian and the Greek—that they are situated to the North of the Tiretta Bazar, and in a confined and crowded neighbourhood—that they appear to be not neglected—that he cannot state whether they are injurious to health, but he respectfully thinks that they are objectionable, as being in the centre of a densely populated City like Calcutta, in which opinion your Committee entirely concur.

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The Mussulman Burying Ground near the Lower Circular Road, mentioned by Mr. Martin, was the subject of complaint by the owners and occupiers of houses in its vicinity so long ago as October 1835, when it appears that thirteen of their number addressed a Letter to the Government, complaining of the great nuisance arising from the slovenly and imperfect interment of the dead bodies, and

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desiring its removal. Among the complainants was the late Dr. Bramley, who concurs in stating that its injurious effects may reach beyond its immediate vicinity, and thus prove prejudicial to the health of all in Southern Chowringhee. To this representation an immediate answer was returned by the Secretary to the Government, stating, that it was an ancient Burying Ground, used as such long before any of the houses built in its vicinity were in existence—that the Governour apprehended, therefore, that it would not be possible to prevent the ground from being used as heretofore ; but that the Police would of course use their influence in promoting any measures that might be suggested for abating the nuisance, without interfering with the rights and privileges of existing persons or bodies of the Community. It does not appear that any such measures have been adopted. In July 1836, a Letter was addressed to your Committee by three of the gentlemen who had addressed the Government, in which they request your Committee to inquire into the circumstances set forth in their Letter to the Government, and to take such steps, as may be deemed by your Committee necessary, either to remedy the nuisance itself—by which, as your Committee apprehend, is meant the removal of the Burying Ground to a greater distance—or to cause its being placed under such proper regulations and controul, as to insure the interment there of such bodies only as can be buried at the requisite sufficient depth.

With regard to the removal of either of these Burying Grounds, or rather the prohibiting the future use of them, your Committee apprehend this could only be done by an act of the Legislature, which, in their opinion, would require a careful consideration of the necessity, or great expediency of the measure, and of the feelings of the Communities, who use these Burying Grounds, whether regarding property, or religion, or the prejudices arising from ancient usage, in a matter invested with great sanctity in the opinions of all mankind. But the interment of all bodies, carried to the Mussulman Burying Ground, at a sufficient depth to prevent their being offensive, is a matter of Police, which your Committee apprehend the Magistrates ought to be required by the Government to enforce.

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In regard to the state of the Privies, both publick and private, in the whole of the Native part of the Town, the evidence, without any exception deserving of notice, consists in the representation of a nuisance of the most intolerable and disgraceful description, upon which it is unnecessary for your Committee to do more than refer your Honour to the evidence upon the subject, which will be found in the Appendix.

In regard to the removal of Carcasses of Dead Animals, it is in evidence that this is not attended to so speedily as to prevent their becoming in some cases a nuisance, and that this is one of the many particulars, in which the attention bestowed upon the purity of the Streets, and the health and comfort of the inhabitants, requires improvement.

Upon this evidence your Committee think it is established, that there exist in Calcutta and the Suburbs nuisances of almost every possible description, some imminently dangerous to the persons and the lives, many prejudicial to the health, and all destructive of the comfort and convenience of the inhabitants, such as it is the duty of the Police in all well regulated Communities to prevent or remove ; and most, if not all of which your Committee can entertain no doubt those, who are entrusted by the Government with the charge of attending to the Police of the Town, have the power of preventing or removing by Law. The doubts, which have been expressed upon this matter, your Committee attribute in a great measure to a want of acquaintance with the law of England, as far as the City of Calcutta is concerned. Whether it is attributable in the Suburbs to any defect in the Government Regulations, or to want of knowledge of them, your Committee has not had the means of ascertaining from the evidence which it has taken ; but

it is certain that no remedy has been effectually applied in the Suburbs, and that the removal of these nuisances there is necessary to the salubrity, not only of the Suburbs, but of the City itself. They see no reason to impute to any Department of the Police a want of zeal in effecting the important purposes of its establishment.

Whether it may be, that readier and less expensive remedies, than are afforded by the Common Law, for the abatement or prevention of the prevailing nuisances in Calcutta, have been provided by Bye-Laws and Regulations which have fallen into disuse, or might be provided by new Bye-Laws and Regulations, which the Government has the power to enact, your Committee does not feel itself in condition to decide. Upon the former of these subjects it can form no judgment, without time for a careful consideration of the Regulations which have been passed; and upon the latter, it would be impossible for it to offer an opinion, without a thorough investigation, and the deliberate balancing, in each description of cases, of the advantages of a prompt and cheap abatement of that particular nuisance, against the danger of committing power to Magistrates to inflict punishments, and to decide upon property, without investigation before a superiour tribunal, and without a jury, contrary to the spirit of the Constitution, and to the Common Law.

Having already stated the amount of Revenue, which might be made applicable to Municipal purposes, your Committee will now proceed to consider whether the whole income of the Town could be placed under charge of the Inhabitants of Calcutta, especially as your Committee understand that the Government is disposed to place it under their charge, provided an effectual and practical plan of management could be suggested.*

Your Committee have consequently made inquiries, but have received only two plans of Municipal Government—one from C. K. Robison, Esq. Magistrate, and the other from the Trade Association; the Chamber of Commerce declining to enter upon the subject, as being beyond their province. Your Committee have

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cviii, cxxiv,
cxlviii, cxlvi,
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Z 41.

* It is not necessary for the purpose with which this abridged Report is printed, to reprint the former Report, so far as it concerns the system of assessing, collecting, and appropriating the revenues of the City. The result shortly is as follows:—

The two chief sources of revenue are the House Tax and Abkaree Tax, or Tax upon spirituous liquors.

The House Tax, at the rate of five per cent. on the gross annual value of the Houses, Buildings, and Grounds in the Town of Calcutta, is levied on the owners or occupiers thereof by the Justices of the Peace assembled at their General and Quarter Sessions for the purposes of cleansing, watching and repairing the Streets of the Town, under the 33d Geo. III. Cap. 52, Sect. 158; and a power is therein reserved to the Governor General in Council to authorise a further assessment, to the extent of two and a half per cent., if it becomes essentially necessary for the purposes aforesaid. The Act of Parliament does not warrant any remission of the Tax on Houses, Buildings or Grounds on account of their not being occupied or for the time let to tenants, an equal assessment being directed "on owners or occupiers of Houses, Buildings and Grounds, according to the true and real value thereof." A considerable deduction, however, is made on this account, and some expense is incurred in supporting an establishment to see that improper advantage is not taken of this Rule. Your Committee are of opinion, that this deduction is contrary to Law, and, as well as the establishment to which it gives occasion, ought to be abandoned.

The House Tax then amounted to net, Sa. Rs.	..	..	..	..	..	..	..	1,97,200
The Abkaree Tax is levied under 33d G. III. Cap. 52. Sect. 159,	..	..	..	..	..	..	..	1,46,100
To these are to be added,								
The Annual† Surplus Tolls on the Calcutta Canals,	..	..	..	..	..	..	..	85,000
Calcutta Ground Rent,	..	..	..	..	..	..	..	13,600
Fees, Fines and Escheats on the average of the last five years,	..	..	..	..	..	..	..	16,800
The Annual Rent of the Chowringhee Plain, &c. about	5,000
Net produce of Convict labour, about	2,000

4,65,700

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† After deducting the charges (Sa. Rs. 30,000) of collection and keeping up the navigation, including the Superintendent of Canals salary of Sa. Rs. 6,000, and allowing Sa. Rs. 5,000 for extraordinary Repairs and Sa. Rs. 15,000 for further Improvements, likewise Sa. Rs. 60,000 to cover the expenditure of Government within the last 15 years.—J. M.

every reason to believe that the Members of the Trade Association would perform the duties which they have proposed laboriously and zealously ; and that, if the inhabitants of Calcutta were all, or even a majority of them, Europeans, such a plan, based on election by inhabitant householders, would be found well adapted for Municipal Government ; but, considering that the European inhabitants are an insignificant part of the whole population of Calcutta, and that by far the greater part of them can only be regarded as temporary residents, your Committee cannot take upon themselves to recommend what they consider wholly unsuited to the present state and condition of the great majority of the inhabitants.

Your Committee are, however, of opinion, that considering the rapid progress now making in education, many years will not elapse, before a class of Natives will be found in Calcutta, able and willing to aid their European townsmen in performing those Municipal duties usually entrusted to the inhabitants of Cities in Europe ; and your Committee, therefore, feel anxious that some preparation should, if possible, be made for so training the inhabitants of Calcutta, that they may in time relieve the Government entirely from the attention which it is now compelled to give to these minute local details. At present, however, and until a more definite plan can be matured and approved, your Committee can only offer the following suggestions :—

As the whole income of the Town cannot be placed under the charge of the inhabitants, there being at present, so far as your Committee can see, no means of establishing an efficient and practical plan of management, based on election by inhabitant householders, your Committee are of opinion that the revenue in the Conservancy Department, including the collection of the House Tax and Abkaree Taxes, should be placed under executive Officers, and that a Board of Commissioners of Publick Health and Conservancy should be annually elected by resident householders, occupying houses of at least the value of 50 Rupees per mensem, with power to examine and audit all accounts relating to the Conservancy Department, and to report on the same to Government, and also to suggest the opening of new thoroughfares, and other improvements, the Government being empowered by law to carry their suggestions into effect, if it approve of them.

If, for the expenses of the general improvements of the Town, it is determined to raise a large sum of money by way of loan, the payment of interest, and the repayment of the principal being secured by Government, your Committee are of opinion that the following additional taxes might be raised for the payment of interest, and to form a sinking fund for liquidation of the principal, viz.

Additional Assessment of $2\frac{1}{2}$ per cent. on houses							
of the value of 50 Rupees per mensem and upwards, which would amount to Sa. Rs. ...							
	88,393	6	0				
Less remission for unoccupancy 10 per cent., ...	8,839	6	0				
				79,554	0	0	
Deduct charges of Coll. 4 per cent., 3,182	2	0					
Additional Establishment, ...	571	14	0	3,754	0	0	75,800 0 0

The increased Assessment proposed on Houses from five to seven and a half per cent., is authorized under the provisions of the Act already referred to.

Your Committee further recommend, that a tax of four Rupees per mensem be imposed on all four-wheeled carriages (not being hackeries) and a tax of three Rupees per mensem on all children's carriages, buggies, gigs, &c. and a tax of one Rupee and eight Annas per mensem on all kranchies, which it is estimated

will produce, as exhibited beneath, a net income of about Rupees 1,14,000 per annum.

Four-wheeled Carriages with two horses, 724
Ditto, with one horse, ... 884

	1,608	at Co.'s Rs. 4	Co.'s Rs. 6,432 0 0
Buggies, ...	1,018	at 3-0	3,054 0 0
Kranchies, ...	262	at 1-8	393 0 0
Children's Carriages, ...	41	at 3-0	123 0 0

per mensem, 10,002 0 0

Or per annum, Co.'s Rs 1,20,024 0 0

Deduct charges of Collection at 5 per cent., ... 6,024 0 0

Co.'s Rs. 1,14,000 0 0

* The following Statement shews the expected Income and Disbursements of the Town Fund, adding thereto the expected produce of the additional Taxes proposed and of savings proposed, in the Police, Assessment, and Abkaree Establishments, shewing a large surplus, to meet the payment of interest, and to form a sinking fund for the gradual liquidation of the principal of the loan, which your Committee recommend to be raised for the general improvements of the Town.

Dr.

Municipal Fund.

Cr.

To Police charges, 5,29,995 0 0
Deduct savings by }
reduction of Es- } 48,495 0 0
tablishment, ... }
To Balance, ... 12,130 0 0

Sa. Rs. ... 4,93,630 0 0

By Assessment, ... 1,97,200 0 0
Add savings by }
reduction of Es- } 6,073 0 0 2,03,273 0 0
tablishment, ... }
By Abkaree, ... 1,56,900 0 0†
Add savings by }
reduction of Es- } 11,057 0 0
tablishment, ... } 1,67,957 0 0
Rent of Chowringhee Plain,..... 5,000 0 0
Profit on Convict labour,..... 2,000 0 0
Fees, Fines, and Escheats,..... 16,800 0 0
Surplus Tolls,..... 85,000 0 0
Calcutta Ground Rent, 13,600 0 0

Sa. Rs. 4,93,630 0 0

† Error, see notes at foot of pages 55 and 59.

Balance brought down, Sa. Rs. 12,130 }
equal at 104-8 per cent. to ... } ... Co.'s Rs. 12,676 0 0
Additional House Tax, Sa. Rs. 75,800, equal at ditto, to ... 79,211 0 0
Carriage Tax, ... 1,14,000 0 0

Co.'s Rs. 2,05,887 0 0

* NOTE.—The Committee contemplated considerable reductions in certain offices, as soon as they could be made with propriety. The Report states the particulars of these reductions. It then proceeds as follows.—

The above Statement is framed upon the supposition that the remission of the Assessment on Houses and Lands unoccupied is to be continued. Your Committee have already expressed their opinion that this remission is not authorized by the Act of Parliament. On the present Assessment of 5 per cent. the amount of this remission is taken at Sa. Rs. 24,949. On the proposed additional Assessment, taken above at Co.'s Rs. 79,211, which is calculated under deduction of the remission on Houses unoccupied, this deduction is taken at Sa. Rs. 8,839—equal to Co.'s Rs. 9,237.

Your Committee think themselves warranted, by the evidence already stated, in taking the annual proceeds of a Tax of 4 annas per diem on Boats entering the projected Canal, which your Committee recommend when the Canal shall be completed, at 50,000 Rs. per annum. It will, in the opinion of your Committee, probably very considerably exceed this sum before many years are past.

To the above Surplus therefore, being	...	Co.'s Rs.	2,05,887 0 0
There may be added remission on 5 per cent. Assessment,	...		26,072 0 0
Ditto on additional Assessment,	...	„	9,237 0 0
<hr/>			
Total immediate surplus,	...	„	2,41,196 0 0
To which will be added when the Canal is opened, Tolls,	...	„	50,000 0 0
<hr/>			
			2,91,196 0 0

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page 9.

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Your Committee, agreeing entirely in the opinion expressed by the Noble Lord, the Governour of Bengal, in his Letter to Mr. Martin, of 24th May 1836, and in Mr. Secretary Mangles's Letter of 22nd November 1836, to the then Chairman of your Committee, in regard to the manner, and proportions, in which the contributions of the local inhabitants, and of the Government, ought to be afforded to local Medical Charities, think it hardly necessary to remark, that the benefits of such an institution as the majority of your Committee contemplate* to the whole British Empire in India, by extending and rendering more certain in its results the experience of the whole Indian Medical world in tropical complaints, and tropical influences—in affording the means of establishing a record of authenticated facts in tropical Medical Statisticks—and in creating, for it will do nothing less than create, a practical School for the education of young men in the principles and experimental practice of medicine, the science which of all others depends the most upon experience and practice, in order to the sending them forth to carry the results of their knowledge over the whole of British India, for the general benefit of its inhabitants—fully equal, if they do not outweigh, the local benefits it will confer by removing much of the load of misery, which presses into the grave, at early periods of life, the sick poor of Calcutta.

The majority of your Committee, therefore, propose, out of the surplus fund afforded by the existing and contemplated Assessments, to defray, in the first place, the monthly expense of the proposed Medical Hospital and additional Dispensaries, leaving the sums allowed by the Government, and the interest and subscriptions, which together now form the income of the Native Hospital and existing Dispensaries, to be applied, as at present, under the controul of the Governours of the Native Hospital; humbly, but confidently, looking to the Government, in terms of Lord Auckland's Letter of 24th May 1836, for the sums

* This refers to a proposal for the erection of a large Fever Hospital in Calcutta, of which a Plan and Estimate are annexed to the Report.

necessary for erecting and keeping in repair the buildings, and purchasing the ground required, "as an aid from the Revenues of the State not beyond what is needed in furtherance of the first foundation of the Hospital," and securing, upon the basis of an equable and very moderate taxation, "ample and permanent means for its future maintenance."

From the immediate surplus, therefore, appearing above, as arising from savings in management, and from the proposed additional Taxation, Co.'s Rs. 2,41,196 0 0
Deduct for the expenses of an Hospital and Dispensaries, ... 36,480 0 0

There will remain, *2,04,716 0 0
applicable, as soon as the proposed reductions of establishment are completed, to the payment of the interest, and formation of a sinking fund for re-payment of the principal, of the loan proposed for the removal from the Town of the pestilential seeds of disease, which now infest it, and for its improvement in comfort, and mercantile convenience, to be further aided by an annual receipt of Co.'s Rs. 50,000, the expected produce of the duty on the Canal when it shall be opened.

Supposing the total cost of these improvements, exclusive of such part of the sums to be expended on the purchase of buildings, and of ground, as may be raised by the re-sale of such ground as can be re-sold, or by loans on the security of ground rents obtained, to amount to Co.'s Rs. 30,00,000, as assumed in a former part of this Report, and that it shall take five years to complete the improvements, the sum to be annually expended will be Co.'s Rs. 6,00,000. Taking the surplus revenue, exclusive of Tolls on the Canal, at Co.'s Rs. 2,00,000, the loan for the first year would be Co.'s Rs. 4,00,000. In the second year, the interest of the loan at 5 per cent. being deducted from the surplus revenue, and the expenditure being as before, the sum to be further raised by loan would be Co.'s Rs. 4,20,000, and the total amount then borrowed would be Co.'s Rs. 8,20,000. The surplus revenue being then increased by the Tolls on the Canal, would amount to Co.'s Rs. 2,50,000, and interest at 5 per cent. on the then amount of the loan, viz., Co.'s Rs. 41,000, being deducted from the surplus revenue, the sum to be further raised, to meet the expenditure of the third year, would be Co.'s Rs. 3,91,000. At the close of the fifth year, the principal sum of Co.'s Rs. 30,00,000 having been expended, at the rate of Co.'s Rs. 6,00,000 per annum, and the improvements completed, the amount of the loans contracted would be Co.'s Rs. 20,52,627, the interest of which, being Co.'s Rs. 1,02,631, being deducted from the surplus revenue, Co.'s Rs. 2,50,000, would leave Co.'s Rs. 1,47,369, or say Co.'s Rs. 1,40,000, as an annual sinking fund to discharge the principal of the debt, which it will accomplish in eleven years and a few months.

Sup. page 56.

This calculation proceeds upon the supposition of the whole surplus revenue, including the savings from reduction of establishment, being immediately available. But, if these reductions are to take place only as offices become vacant, the amount of no part of them will be immediately available; and they will only become available by degrees, and in the course of years, as lives drop. The offices to be abolished are understood to be almost entirely filled by natives of the country, and no vacancy will, therefore, occur, except by death or incapacity from

* NOTE.—From this amount Sa. Rs. 10,800 must be deducted, as in the Report, at page 185, a typographical error exists under the head, "*Municipal Fund*, By Abkaree 1,56,900" instead of "Sa. Rs. 1,46,100" as stated at page 118 of the Report, and which error is carried through the whole of the succeeding calculations.—J. M.

age or ill health, in which two last cases a pension would necessarily supply the place in whole, or in great part, of a salary.

Unless some arrangement is adopted to give to the revenue the immediate benefit of these proposed savings, by pensioning off such of the existing officers, as have claims upon the justice or humanity of the Government in case of their dismissal from office, and the Government shall think it right to undertake the payment of these pensions, in order to complete at once the proposed arrangement, and to set the whole surplus revenue free, for the more speedy accomplishment of the improvements, which the urgency of their nature would seem strongly to recommend, the calculation must be framed on the amount of available revenue, excluding the amount of these savings. The savings will occur at such distant and uncertain periods, in all probability, as to make it unsafe to take them into account.

In this case the sum of Sicca Rupees 65,625, the total amount of savings proposed by reductions of establishment under the three heads of Police, Assessment, and Abkaree Tax, being equal to Co.'s Rs. 68,578, will have to be deducted from the above stated expected surplus of revenue Co.'s Rs. 2,04,726, leaving as immediately available surplus, Co.'s Rs. 1,36,148, say Rs. 1,36,000. If with this income, and the addition, after two years are passed from the commencement of the undertaking of the expected amount of Tolls on the Canal, the completion of the improvements be extended to six years, at the rate of Co.'s Rs. 500,000 per annum, the total debt incurred on such completion will be Co.'s Rs. 22,60,389—the annual income applicable to its payment will be Co.'s Rs. 1,86,000—from which the interest on the debt at 5 per cent. being deducted, there will remain a sinking fund of Co.'s Rs. 73,000 per annum, applicable to the re-payment of the principal, which it will finally accomplish in nineteen years.

Although not calculated, the amount of salaries or pensions falling in from time to time will probably be such as to provide for contingencies, and to guarantee the complete operation of the fund, if not diverted from its purpose.

It will be necessary that the improvements should be conducted under the directions and authority of the Government, and the superintendence of its Engineer Officers, and that the money should be borrowed on the security of the Government, the punctual payment of the interest at 5 per cent. and the re-payment of the capital borrowed, being secured to the Government by the produce of the proposed Taxation. Your Committee venture to hope that this will afford to the Government such a security for the extinction of the debt, by the rapid annual diminution of its amount, and for its final discharge within so short a number of years, as that your Honour will not hesitate, upon the ground of a temporary pecuniary obligation of so small an amount being undertaken by the Government, to sanction a plan not merely of vast importance, but of essential necessity, to the prosperity of the capital of British India, and to the preservation of the healths, and the lives of those who are compelled to inhabit it.

Your Committee have already stated their opinion, in reference to the reduction of expenditure in the Police Department, that there should be no encroachment on the vested rights of the present incumbents, and, besides cases which may be properly considered as cases of vested rights, they are perfectly alive to the injustice and inhumanity of suddenly breaking up a large Publick Establishment, and leaving the whole, or a great part, of the members of it, without pay or employment, suddenly to seek them where they best can, or be without the means of subsistence if they fail to find them. But, on the other hand, they apprehend that the Publick is no more bound than an individual to continue to

conduct its business at an unnecessary expense, because the error or inattention of its officers, and their neglect of its interests, have led them for a course of years to employ more clerks and servants than are required. The usual way, when offices are reduced by the Government, or by authority of Parliament, in Great Britain, is to grant pensions for life to such officers as have claims upon the Publick from length of service or infirmity, not to the whole amount of salary, except in a few instances, but upon equitable principles, in proportion to its amount, and having regard to the time and labour of the officer being dispensed with, and to give sufficient notice to the young and the active, recently brought in, to enable them to procure employment elsewhere. Your Committee apprehend that, upon this principle, much less than the large amount of Co.'s Rs. 68,578 per annum, which has been for many years back, and is now, uselessly expended in the employment of unnecessary clerks and officers, would suffice to arrange a compensation to all of those reduced upon the reformation of the offices, who had reasonable claims to compensation, such as should be liable to no reasonable objection on their part. It is unnecessary to go more minutely into the detail of compensation, till it is known whether the Government approves of the reforms recommended by your Committee.

Your Committee have not been able to extend their inquiries to the various questions relating to the Drainage of the Salt-water Lake, upon which your Honour has been pleased to refer to them several papers. These questions are of great importance, both as they regard the medical consequences of the operation, and the practical means of effecting it; and, in the former respect, they require the most careful consideration, to avoid the dangers frequently attendant on drainages of similar, or even smaller, extent, in climates of less insalubrious temperature. This inquiry, in connexion with the necessary avocations of some of its members, will occupy more time than your Committee think it right to add to that which has already unavoidably elapsed, before submitting to your Honour their General Report upon the important subjects, upon which they are able at present to state the result of their investigations.

There are other subjects of much importance, within the range of the reference to them, under the extended interpretation they have given to the words of that reference, into which they would gladly have inquired had the time permitted; such as the freedom, or otherwise, of the Streets of the Town from beggars, and unfortunate objects, exhibiting disgusting disease, or deformity, for the purpose of obtaining charity—the state, and operation of charitable Institutions not connected with the affording Medical, or Surgical relief—some suggestions which relate to the office of Coroner—the state of the Municipal Regulations, and the improvements which these may admit, or require, with a view to the various matters adverted to in this Report, and in the suggestions of the Chief Magistrate, which will be found in the Appendix—the actual, and the probable future benefits, which are, and will be derived from the Clinical Hospital lately added to the Medical College—and some other matters noticed in preceding parts of this Report.

Your Committee feel the imperfect nature of their Report from the omission of these, and probably some other subjects, which would have demanded, and, had time permitted, would have received their attention.

To the consideration of the Papers your Honour has directed to be transmitted to them, regarding the Drainage of the Salt-water Lake, and the questions connected with that important, and difficult measure, as well as to the reporting upon the new Clinical Hospital, your Committee will forthwith address themselves, making them the subject of a Supplementary Report. In reference to the

Drainage of the Salt-water Lake, however, they are glad to be able to express their conviction, that the salubrity of the City, and Suburbs, is not dependent upon the removal of this Marsh, although, in common with all the circumjacent country, they would derive great benefit from its removal; but that their salubrity is immediately dependent upon that, which it is within the immediate power of the Government to effect, without incurring the dangers of a partial and progressive drainage of a large extent of water, and moist ground—and that is, by the thorough drainage of all the ground within the City and Suburbs, so as to leave no water so near the surface as to have the power of generating miasmata—and by screening the City and Suburbs from the passage of those poisonous particles, which are borne along on the moist air, by belts of bamboos and forest trees planted along the margin of the moist land where they are generated, and interposed on all sides between these semi-marshes and the City and Suburbs, except on that side where the expanse of water forming the River affords an effectual protection; for your Committee think it established, as the result of the various observations made by accurate observers, brought together in Dr. Johnson's valuable work, referred to in former parts of this Report, that thick and lofty belts of wood along the margins of damp soils and marshes, which generate miasmata, afford an effectual screen to the leeward, upon which these deleterious particles appear to be deposited, and which intercept them in their course, rendering the parts beyond free from the effects of the febrifick poison—and also that these miasmata are lost, or absorbed, by passing over a certain surface of water.

Johnson's influence of Tropical Climates, page 82, *et seq.* 93, 94.

Your Committee have already stated their hope, and their belief, that the generation of miasmata within the City and Suburbs, and their neighbourhood, may be so subdued, by drainage and cleansing, as to render the City a residence no otherwise injurious to European constitutions than through the operation of tropical heat, in a climate naturally damp. But to this heat, and to the dampness of the atmosphere in this vast delta, the residents in Calcutta must submit; and the operation of these, though freed from what are properly malarious influences, we know to produce effects upon the European constitution, which lower its tone, and, if long and uninterruptedly continued, essentially impair it. We know also the vast importance to the preservation of health, under these circumstances, and to its restoration when impaired, of occasional change of air to a somewhat lower, and more equal temperature, and to an atmosphere less damp. If India is to be governed by Englishmen, it should seem a matter of great political importance to render the seat of its government a place where Englishmen, having the usual constitutions of their race, can live in the full possession of their faculties, and their vigour. The first thing, therefore, is to remove from it its present pestilential character; and hardly less important is it to provide places of refuge, which those may occasionally resort to, without an injurious interruption of business, who desire to preserve health and vigour; and those may fly to for their perfect restoration, in whom they have been impaired. Upon this subject your Committee have received a Paper drawn up by Mr. Martin, one of their members, entitled, "On the choice of localities for the sick of Calcutta," which they have thought deserving of being brought to your Honour's observation, and have printed in the Appendix. Of the practicability of the particular plan, which he so strenuously advocates, your Committee can offer no opinion. But of the extreme importance of providing, within the reach of the European inhabitants of Calcutta of moderate means, a place of refuge, such as their learned member describes, and of affording easy access to it, your Committee think there can be but one opinion.

From Mr. Martin's opinion, founded upon his medical experience, it should seem, that for perfecting the cure of disease produced by a tropical climate, or contracted in it, no elevation upon the continent within the tropicks, remote from the sea, is found efficacious; while the sea-air of an island or dry promontory is generally so. The establishing a sanatorium, therefore, in one of these last mentioned positions, must be admitted to be of greater importance than in the former, since it will answer both purposes—that of the restoration, and that of the preservation of health. But, as the latter is no less indispensable to enjoyment, and usefulness, than is the former, your Committee are humbly of opinion, that the attempt to render a considerable elevation, rising from the plain in Bengal, accessible from Calcutta, and habitable as an occasional retreat, by such as desire a relaxation from the fatigues of business, and a change of air, is one which demands, in an especial manner, the patronage, and the assistance of the Government of India, upon political considerations of a high nature.

To the enlightened minds of those entrusted with the Government, they leave the suggestion of those considerations which have recommended to every intelligent statesman, as an object deserving of his greatest attention, the improvement of the salubrity, the convenience, the beauty, and the magnificence of the Capital of a great Empire. One, whom your Committee will stand readily excused with your Honour for considering as the greatest statesman, among the many considerable men who have governed India for England, devoted much of his attention, in the midst of the most arduous affairs, to the improvement of this Capital in all these respects—and he accomplished much in many of them. Time alone appears to have been wanting to him, for the completion of his splendid undertaking—but, in leaving to the present Government the glory of its accomplishment, he has bequeathed to them his opinion of its magnitude, and its claim to be considered an important part of the policy of the Government of this empire.

“The increasing extent and population,” says the Marquis of Wellesley, in a Minute dated June 16th, 1803, “of Calcutta, the capital of the British empire in India, and the seat of the supreme authority, require the serious attention of Government. It is now become absolutely necessary to provide permanent means of promoting the health, the comfort, and the convenience of the numerous inhabitants of this great Town.” His Lordship enumerates the defects which contribute to its unhealthiness—as the extremely defective construction of the public drains, and water-courses of the Town—that there were no general regulations with respect to the situation of the public markets, or of the places appropriated for the slaughter of cattle, the exposure of meat, the burial of the dead—the houses, in those quarters of the Town occupied principally by the Native inhabitants, having been built without order, or regularity, and the streets and lanes having been formed without attention to the health, convenience, or safety of the inhabitants, to which cause must be chiefly ascribed the frequency of fires, by which many valuable lives had been annually lost, and property to a great extent had been destroyed.

“It is a primary duty of Government,” his Lordship continues, “to provide for the health, safety, and commerce of the inhabitants of this great Town, by establishing a comprehensive system for the improvement of the Roads, Streets, Public Drains, and Water-courses, and by fixing permanent rules for the construction, and distribution of the Houses, and Public Edifices, and for the regulation of nuisances of every description.

“The appearance and beauty of the Town are inseparably connected with the health, safety, and convenience of the inhabitants; and every improvement which shall introduce a greater degree of order, symmetry, and magnificence in the

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page 301.

Streets, Roads, Ghats, and Wharfs, Publick Edifices, and Private Habitations, will tend to ameliorate the climate, and to secure and promote every object of a just and salutary system of Police. * * * "

With these views, the Governour General proposed that certain gentlemen should be appointed a Committee, to consider and report to his Excellency in Council the means of improving the Town of Calcutta; and he proposed that special instructions should be issued to the Committee, to take the levels of the Town, and adjacent country, and report the alterations necessary in the direction of the drains and water-courses—to examine the relative levels of the river during the rainy season, compared with the drains and water-courses—to suggest the description of drains and water-courses best calculated, first, to prevent the stagnation of rain-water in Calcutta and the vicinity thereof; and, secondly, to cleanse the Town—to report the establishment necessary for cleansing the drains, and water-courses, and keeping them in repair—to take into consideration the state of all places of interment in the vicinity of Calcutta, and to propose an arrangement for the future regulation of them—to examine the present state, and condition of the Bazars, and markets for meat, and of the slaughter-houses, and to propose rules and orders for the regulation of those already established, for the removal of such as had become nuisances, and for the establishment of new markets and slaughter-houses thereafter—to inquire into all existing nuisances in the Town and its vicinity; and to propose the means of removing them—to examine and report, for the consideration of Government, the situations best calculated for opening streets and roads, leading from east to west, from the new Circular Road to Chowringhee, and to the River, and from North to South, in a direction nearly parallel with the three then new roads—to suggest such other plans and regulations, as should appear calculated to promote the health, convenience, and comfort of the inhabitants of Calcutta, and to improve the appearance of the Town and its vicinity—lastly, to form, and submit to the Governour General in Council, an estimate of the expense required to complete all such improvements, as might be proposed by the Committee.

"The means," his Lordship says in conclusion, "for raising the necessary funds, for the purpose of defraying the expense, which must attend the execution of the important improvements suggested in this Minute, will claim the early, and deliberate consideration of Government.

"The Governour General entertains no doubt that those funds may be raised without subjecting the Honourable Company to any considerable expense, and without imposing a heavy tax on the inhabitants of Calcutta. It will certainly be the duty of Government to contribute, in a just proportion, to any expense which may be requisite for the purpose of completing the improvements of the Town."

It is no small satisfaction to your Committee, that the main objects contemplated for the improvement of the Town by this accomplished statesman, six and thirty years ago, as then demanding the immediate attention of the Government of this country, have been brought to your Honour's notice as forming part of the various subjects of this their Report, and they entertain no doubt that your Honour will agree with him in his opinion, that the state of the Capital of the British empire in India claims that the Government should bestow upon it its prompt and serious attention, as constituting one of its primary duties, and that among these duties is included that of contributing, in a just proportion, to the expense, which may be requisite to render it a healthy, and convenient residence for those in health—to provide it with ample, well endowed, and well regulated Hospitals for the sick, and the poor—and to bestow upon it generally that "degree

of order, symmetry, and magnificence in its Streets, Ghâts, Wharfs, and Publick Buildings," which may not only "tend to meliorate the climate, and to secure and promote the objects of a just and salutary system of Police," but may give to it, in all respects, the character befitting the station, which it ought to hold among the Cities of the world.

We have the honour to submit this our Report to your Honour's consideration.

TUESDAY,
7th January, 1840.

(*Signed*) J. P. GRANT, (Chairman,)
C. W. SMITH,
J. YOUNG,
J. R. MARTIN,
PROSSUNNOCOOMAR TAGORE,
R. SCOTT THOMSON,
DWARKANAUTH TAGORE,
RUSTOMJEE COWASJEE,
RUSSOMOY DUTT.

S E C O N D R E P O R T

OF

THE COMMITTEE

APPOINTED BY

The Right Honourable the Governour of Bengal

FOR THE

ESTABLISHMENT OF A FEVER HOSPITAL,

AND FOR INQUIRING INTO

LOCAL MANAGEMENT AND TAXATION

IN CALCUTTA.

Calcutta:

BISHOP'S COLLEGE PRESS

1846.

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SECOND REPORT.

IN their first Report, your Committee submitted to his Honour the then Governour of Bengal the results of very extensive inquiries which they had instituted into the Drainage, Cleansing, Ventilation, and Communications of the City of Calcutta and the Supplying it with Water—the establishment of an Hospital or Hospitals and of additional Dispensaries for the treatment of diseases among the Native poor—the causes of disease and obstacles to convenience and improvement which abound in it—the state of the Suburbs—the system of collecting and appropriating the taxes of the Town—the state of the Police as well in the Town as on the River which forms its harbour—if on some of those matters not so thoroughly as they could have wished, yet on all of them in such manner as in their opinion to justify their reporting upon them—subject in some particulars to further inquiry. At the close of that Report your Committee stated that to the consideration of the papers his Honour had directed to be transmitted to them regarding the Drainage of the Salt Water Lake, and the questions connected with that important and difficult measure, as well as to the reporting on the new Clinical Hospital, your Committee would forthwith address themselves; making them the subject of a Supplemental Report.

Your Committee, however, in reference to the Drainage of the Salt Water Lake, were then glad to express their conviction that the salubrity of the City and Suburbs was not wholly dependent upon the removal of this Marsh, but was immediately dependent upon that, which it was in the immediate power of the Government to effect without incurring the dangers of a partial and progressive drainage of a large extent of water, and moist ground, viz. the thorough drainage of all the ground within the City and Suburbs, so as to leave no water there so near the surface as to have the power of generating Miasma, and the screening the City and Suburbs from the passage of those poisonous particles from the Marsh by belts of bamboos, and forest trees, planted along the margin of the moist land where they are generated.

Upon the Drainage of the Salt Water Lake, and the questions connected with that measure, a vast mass of information has been collected, from time to time for many years back, and deposited in the Government Offices of this City.

Your Committee thought they could not better fulfil the intention with which they were appointed, so far as this great and important subject was concerned, than by ferretting out of the recondite obscurity in which they were so buried the several results of these laborious and scientific inquiries—This of course has taken a considerable time—But they think the bringing of this information to your Honour's notice, and that of the Publick, well worthy of the delay, and a greatly more valuable offering, with reference to the subject to which it relates, than any observations which could be submitted by your Committee; and your Committee being satisfied, as above stated, that the frightful insalubrity of the Town was not immediately

attributable, in any material degree, to the existence of the Salt Water Lake, and would not be so at all, if the suggestion of your Committee to plant a screen of wood were adopted, but rather to other causes obvious and indisputable in their nature, the existence of which, and the mode of removing them, your Committee had reported upon to the Government by its command so far back as the 7th January 1840, with no other result than a letter of thanks, which they had the honour to receive for their report from the Government who had appointed them, it did not appear to your Committee that any inconvenience was likely to result from a little delay in the completion of their Supplemental Report, which would not be counterbalanced by the greater fullness of detail in the information they collected.

App. (G) Paper marked No. XI. page 56.

Ibid — Papers marked No. I. to No. X. inclusive, pages 1 to 55.

Ibid — Paper marked No. I. page 1.

Ibid — Papers marked No. II. and No. III. pages 27-8.

Your Committee had the honour to receive a letter, under date 18th September 1838, from F. J. Halliday, Esq. Secretary to the Government of Bengal, transmitting to your Committee, by direction of the Honourable the Deputy Governour of Bengal, certain papers relative to the Drainage of the Salt Water Lake, and stating that his Honour would be happy to be favoured with the Committee's opinion upon the subject.

Of these papers the first was a Minute of Lord William Bentinck, then Governour General, on the subject of draining the Salt Water Lake, and improving the Canal.

This Minute, which bears date the 2d February 1830, was transmitted to the Court of Directors on the 16th February 1830, to which Despatch the Court returned an answer dated 10th November 1830.

In his Despatch the Governour General had desired to have the opinion of English Civil Engineers well acquainted with works of that nature. This the Court declined to procure, stating that there was sufficient knowledge upon the subject already existing in the Engineer Officers in their service in India. In his Minute the Governour General proposed, that the line of Canal, then executing according to the Plan of the late Major Schaleh, should pass to the westward of the Salt Water Lake, instead of through the Lake as originally designed, which Canal was to connect the Salt Water Lake with the Hooghly, and “that with this improvement should be connected the execution of another object of equal utility and advantage with the Canal itself, viz. the Draining and Warping up the Salt Water Lake, “the area of which comprises $18\frac{1}{2}$ square miles, or about 12,000 acres.”

Of this Plan the Court of Directors were pleased to approve, as promising, so far as they could judge of it, much publick benefit; and they left it to the discretion of the Government of India to undertake it wholly themselves, or to permit individuals, including the Company's servants, to embark their money in the work.

If the Government undertook it on account of the Company, the Directors suggested that they would do well to open a negotiation before hand for purchasing the Salt Water Lake, which had been disposed of in perpetuity paying a rent of about 4000 Rs. to Government. Your Committee have obtained information relative to the price at which this purchase may be made.

Ibid, pages 5 and 26.

The profit to the Zemindars from the fisheries—from reeds—and from lands from which the waters had receded—the Governour General states that he had learnt from the Commissioner to amount to about 16,000 Rs. per annum:

The Court of Directors in their letter state the Plan to be a gratifying proof of their Governour General's desire to improve the commerce of India, and increase the salubrity of Calcutta and its vicinity. Your Com-

mittee can only express their hope that the appreciation entertained by the Honourable Court of the great importance of both these objects continues the same.

It appeared to your Committee that Lord William Bentinck's Minute, of the 2nd February 1830, above mentioned, must be taken as forming the outline of the first subjects they had to consider, and the foundation of their inquiry and report.

The first subject contemplated in that Minute is the improvement of the line of Canal originating in Major Schaleh's Memoir, and then executing by Captain Prinsep.

App. to App. (G)
Paper marked A
page 1

The 2nd, is the Draining and Warping up the Salt Water Lake.

The 3rd, the Improvement of Tolley's Nullah.

The 4th, the Drainage of the City.

The 5th and last, the Financial part of the question.

But upon the first subject it appeared to your Committee, from information they received from the Government Offices, that further matters, not mentioned by Lord W. Bentinck, arising out of the proposal offered for consideration by Major (then Lieutenant) Schaleh, had attracted the attention of the Government and Court of Directors, by whom that proposal had been ordered to be carried into execution by an Order dated 11th July 1827, still subsisting without any subsequent countermand, into which it appeared to your Committee material that they should fully inquire, with a view to report thereon, as intimately connected with the subjects referred to their consideration.

Appendix (H)
No 24 a p 91.

Major Schaleh's proposal was communicated in a Memoir taken into consideration by the Government on the 28th July 1821. It was entitled "A Memoir by Lieut. J. A. Schaleh, on a Plan for the formation of an easy, permanent communication between the Upper and Eastern Provinces of India and Calcutta by water, during the dry season." This is the Paper referred to by Lord William Bentinck.

App. to App. (G)
Paper marked B
page xiv

App. to App. (G)
Paper marked A.
page 1

Major Schaleh's Memoir began by adverting to the want of a free Navigation between the Eastern and Upper Provinces and Calcutta during the months of January, February, March, April, and May, when most of the rivers which branch off from the Ganges become too shallow for large Boats; and he says that considerable expense had been incurred to remedy the evil, but to that time without effect—that in the plains of Bengal there is no difficulty in forming a Canal, the country being an uniform flat, and the soil easy of excavation, but that the difficulty of keeping a Canal open in the higher parts of Bengal is so great as to oppose an insurmountable obstacle to success—that both Major Rennell and Colonel Colebrooke, who had of all others paid the most attention to the subject, were decidedly of this opinion, and he cites memoirs of these gentlemen to this effect.

Ibid.

Ibid.

He therefore, offers for consideration a plan for opening a free communication between the Upper and Eastern Provinces of India and the Hooghly river at Calcutta, entirely independent of the caprices of the Bhauagaruttee, and other *branches* in the Delta in the upper part of their course; and which shall promise not only to be permanent, and free from the objections which have accompanied former plans, but shall repay, in a short period of time, the expense of excavation, and ultimately become a source of considerable revenue to Government, or profit to any body of individuals who may embark in the speculation.

Ibid. — pages x
and xi

Ibid - page iii

He says, that the causes which render the country towards the head

4 SECOND REPORT OF THE COMMITTEE ON THE

of the Delta unfit for Canal Navigation, do not apply to that portion of Bengal which is within the influence of tide, and which, on the contrary, appears peculiarly adapted for such an undertaking; and he mentions the circumstances which obviously render it so: and he instances Goodlad's Creek, which was excavated in 1796, but had not, at the time he was writing in January 1821, become at all obstructed, or experienced any change, and a cut made by Lieut. Morrison of the Engineers, which having retained its original form might be mentioned as another instance of the durability of such works in this part of the country. Having traced the course resorted to by the Up-Country trade Boats, when all the other passages to Calcutta branching off from the higher parts of the Ganges were unavailable, by the river Chundna branching off at Koostee, and the Gurroy branching off at Mooddapoor down to Mosundurpoor in the Jessore district, where they unite, flowing into the Soondurbun passage at the village of Alleepore, near Koolna, whence the route lies through the Soondurbuns and Tolley's Nullah to Calcutta, he states the difficulties and dangers of the Navigation.

App. to App. (G)
Paper marked A.
page iii.

As far as the Soondurbuns it is perfectly safe.

It then becomes dangerous to Boats heavily laden, from the great breadth and depth of some of the rivers, which form a part of the passage, independent of which the Natives, he says, are strongly averse to this route from the dread of Tigers, the danger of cooking ashore, the want of fresh water, and the delay attending the passage through Tolley's Nullah: and he states that Tolley's Nullah was, at the time he wrote, quite inadequate to the Navigation.

What he proposed, therefore, was to make one grand line of water communication between the Upper Provinces and Eastern side of Bengal with Calcutta, open and secure for every description of Boat, by forming a junction between the Gurroy and Hooghly rivers by means of Canals at the head of the Soondurbuns, taking advantage of such Nullahs as flow in a suitable direction, thus avoiding the large rivers, and the inconvenience of the present route.

The Gurroy being perfectly safe until reaching the village of Koolna, the Soondurbun passage may be considered as commencing there.

From this point he therefore starts, considering it as the Eastern extremity of his proposed line, and, proceeding along it to Calcutta, he enters into a minute and most satisfactory detail of every circumstance, which might in any way affect the execution of the Scheme.

Upon Map No. I, will be easily traced the route which he proposes.

In an Appendix to the above mentioned Memoir, Major Schaleh adverts to the want of Drainage and Cleansing in the Town of Calcutta, and suggests a Plan for their improvement in conjunction with the Canals proposed.

Inserted opposite
page vi. of App. to
App. (G)
App. to App. (G)
Paper marked A. I.
page xiii.

The Memoir of Lieutenant Schaleh having been carefully considered by the Governour General in Council, Resolutions were passed in Council under date the 28th July 1821, declaring that his Lordship in Council was disposed to think very favourably of the Plan proposed by Lieutenant Schaleh, the several parts of which appeared to be very ably and judiciously conceived. His Lordship in Council deemed it necessary, before coming to any final decision, to receive the deliberate opinion of such persons as might appear most competent to judge of the nature and extent of the advantages to be expected from it, and of the probable charge to be incurred in its execution and maintenance. For the full investigation of those

Ibid—Paper mark-
ed B. page xiv.

Ibid—Paper mark-
ed B. page xv.

questions it appeared to his Lordship in Council desirable to seek the aid of a Committee; and he therefore selected certain gentlemen, whose names are therein mentioned, to form such Committee.

The Resolution states, that it appeared unnecessary to state in detail the different matters which the inquiries of the Committee were to embrace—that they would naturally suggest themselves on consideration of Lieut. Schalch's Report and Plan, or would arise out of the results of future investigation. But in paragraph 6, the Resolution expressly declares, that "the Committee would of course understand, that, though the Drainage of the City was not necessarily connected with the proposed Canal, yet the matter was one to which it was not the less desirable that their investigation and Report should extend—that the probable influence of the proposed work on the health and cleanliness of the City was indeed as obvious a point of inquiry, as the degree in which it might be calculated to facilitate Commercial intercourse."

It appears, therefore, that the attention of the Government of India was directed to the Drainage and Cleansing of the Town of Calcutta, with a laudable degree of concern for the health of the Inhabitants, and a just appreciation of the policy of improving the healthiness, and convenience of the Capital of a great country, so far back as July, 1821, twenty-four years ago; and that it then considered these things matters to be kept steadily in view, in conjunction with every scheme for improving its Commercial intercourse. Your Committee cannot refrain from expressing their surprise, mingled with the deepest regret, that, at the end of these 24 years, not a single step has been taken to remove from those parts of the City inhabited by the natives of the country any of the frightful evils attendant upon a total want of Drainage, of Cleansing, and of free Ventilation.

On the 28th July 1821, a Second Appendix to his Memoir was submitted by Lieut. Schalch to the Committee appointed to Report upon his plan.

App. to App (G)
Paper marked D
page xvii.

In this he offered to the notice of the Committee some further information, more particularly upon that part of the scheme which comprehended the proposed junction of the Salt Lakes and River Hooghly, in which, with the view to meet the objection which had been started against the practicability of forming the proposed communication, on the ground of the difference of level, and the velocity of the communicating streams, he explained in a scientific and satisfactory manner, the rules upon which the velocity of any River depend, applying them to the case of the Ganges.

In addition to the Appendices above-mentioned, Lieut. Schalch furnished the Committee with a Paper shewing the method employed to ascertain the difference of level between the Hooghly and Salt Lakes, and the actual difference of level so ascertained, and a Paper containing an estimate of the expense likely to be incurred in the execution of the scheme, and the profit to be expected from the re-sale of the Land along side of the Canal Road, and the yearly receipt from Tolls on Boats passing through the Canal, and lying in the Harbour, after deducting repairs and establishment.

Ibid, Papers marked D L. and A
pages xxv. and xxvi.

On the 28th October 1822, the Committee appointed to examine Lt. Schalch's plan made their Report, in which they state, that in the course of their inquiries no ground had arisen to impugn the correctness of the opinion of Lt. Schalch—that in order to simplify their labours they had divided the subjects of investigation into several heads, under which they had arranged lists of Queries for distribution—and that they had distributed them very extensively, along with copies of Lt. Schalch's Memoir, to the several persons from whom information appeared obtainable. A list of these persons is given in the Report, and, as far as can be judged at this distance of time.

Ibid, Paper marked E page xxviii.

Ibid, Papers marked E. 1. d to E. 4 r.
&c. inclusive p 1

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the list appears to have embraced every person of this description. The Queries and Answers obtained are inserted in the Appendix to their Report.

App. to App. (G)
Papers marked E.
to E. 66, &c. pages
xxviii. to cxxlviii.

Appendices (H)
and (I) &c.

Ibid—page xxxii.

The Report was exceedingly favourable to Major Schalch's proposal, and the whole of this valuable Report, and its equally valuable Appendix, which lay in MS. in the Office of the Secretary to Government, as did many other valuable Papers in that and other offices, wholly concealed from the knowledge of the publick, and probably from that of all the Members and Secretaries of Government, your Committee, with the approbation of the Government, have printed in the Appendices to this Report.

In their Report the above Committee, under the Second head of their inquiry, reported their opinion of the influence of the proposed Canal on the accommodation and draining of the City of Calcutta, with the probable cost of land, &c., and they stated, that they were satisfied that the Drainage of the City would be materially improved, and facilitated, by the construction of the Canal, provided due means were taken to prevent the river from flowing into it during the Rainy Season—that the mode, with slight modifications, in which Lieut. Schalch proposed to effect this object had been generally approved—and that, as far as they had means of judging, it would perfectly secure the object in view—but that his Plan for conveying the filth and ordure of the Town through Tunnels to the New Canal, would not in their opinion answer—that the construction, however, at proper intervals, of Tunnels, described by Mr. Blechynden, from the Chitpore Road to the New Canal was considered highly desirable.

App. to App. (G)
Paper marked E.
14, page lxxvii.

Mr. Richard Blechynden in his Letter to the Committee on the 6th January 1822, in reply to the queries contained in the List No. 2, described the Tunnels he proposed.

The insufficiency of the Channel of Tolley's Nullah for the trade in its then state, the Committee Report to be accurately described by Lieutenant Schalch, and very generally noticed in the Communications they had received.

Ibid, page xxviii.
Ibid, Paper marked E. 7, page lxi.

It appears from the Report, that, during their progress, the Committee had turned their attention to the state of the existing Navigation through Tolley's Nullah, and it appears that, on the 2nd February 1822, the Secretary to the Committee addressed a Letter to the Secretary to Government, in which he stated that the Committee found the obstruction to free Navigation by the route of Tolley's Nullah a source of very general complaint, and that with the Boat Insurance Company and the Boat Agents this consideration had weighed as one motive for an approval of the new line of Canals, and that the employment of Lieutenant Schalch on the duty of clearing Tolley's Nullah appeared to the Committee fraught with considerable advantage to the future prosecution of the line of Canals.

Ibid, Paper marked E. 9, page lxiv.

App. (H) Paper
marked No. 5,
page 2.

On the 8th February 1822, Lieut. Schalch was instructed to examine Tolley's Nullah, and to report upon its present state, submitting at the same time an estimate of the expense likely to be incurred in clearing its bed, and repairing its banks. Lt. Schalch addressed the Canal Committee under date 15th May 1823, stating that he had completed a minute survey of Tolley's Nullah, when he received the Resolution of Government of the 23rd April preceding, which required that Tolley's Nullah should be considered solely with reference to the *Diamond Harbour and Saugor Canal*; to the proceedings regarding which proposed Canal your Committee will presently call your Honour's attention.

Your Committee has found the survey of Tolley's Nullah here mentioned, but has not found any Report thereon made by Lt. Schalch; nor can they state whether any thing was done in reference to Tolley's Nullah.

Note.—The Survey of Tolley's Nullah by Lieut. Schalch is deposited in the Office of the Military Board.

but see page 67
of this Report
p. 62

On the 12th June 1823, the Secretary to Government addressed a Letter to the Secretary to the Canal Committee, stating that the Governour General in Council remarked, that whatever was done for the improvement of the Navigation of Tolley's Nullah, must now be done with reference to the Canal to Channel Creek—that no separate Report was therefore required.

Appendix (H)
page 7th No. 10.

It is probable, that the improvement of the Navigation of Tolley's Nullah having been connected with the formation of the Canal to Channel Creek, it was no further proceeded with, this latter measure never having been carried into execution, though, as will presently appear, it was not declared to be abandoned, however it may have been suspended or forgotten.

On the 20th March, 1823, the Governour General in Council recorded a resolution, that, having deliberately considered the above Report of the Committee on the Plan proposed by Lieutenant Schalch, and the Papers which accompanied it, for an easy and permanent communication between the Eastern Provinces and Calcutta, he was fully satisfied of the expediency of undertaking the proposed work without delay—that the practicability of making the Canal in question at a charge not exceeding the amount estimated by the Committee, and the facility with which when made it might be kept open, appeared to be fully established—that it seemed to be very doubtful whether any more direct line of communication between the River Hooghly and the Ganges could be rendered navigable throughout the dry season, and there was thence reason to conclude that the work would afford a very important facility to the trade to the Western Provinces,—that, *independent however of this branch of commerce*, the great utility of the projected Canal appeared to be fully established.

App. to App. (G)
Paper marked F.
I. page ccxx.

The Resolution having adverted to the extent of the commerce in question—the enhancement in the price of firewood and other necessities, and the importance of facilitating the means of conveyance,—the tolls to be collected in the Canal in question—and the insufficiency of Tolley's Nullah, proceeds to state, that it was impossible to contemplate the present condition of that Nullah, crowded as it is with Boats, and affording a long, and inconvenient passage to the Soondurbuns, without a strong conviction *that the community have reason to complain of the appropriation of the Toll levied*, for that such imposts ought to be regarded less as a source of direct profit, than as a fund to meet the charge of maintaining, and extending the Channels of Commercial intercourse—that, viewing the matter in this light, *the Governour General in Council would doubt the propriety of maintaining the existing Tolls, were it his intention not to adopt any arrangement for facilitating the approach to Calcutta.*

App. to App. (G)
Paper marked F. I.
page ccxx.

The Governour General states, that he recognises at once an assured ground of confidence that the work proposed by Lieut. Schalch will be extensively beneficial, and that the expense of it may be met without any pressure upon the general resources of Government. On the above ground the Governour General in Council does not hesitate to resolve that the undertaking shall be immediately commenced. The Resolution then proceeds to consider the estimate of expense, and the anticipated receipt expected to meet it,—the principles which ought to regulate the compulsory sale by the parties, and purchase by the Government, of ground adjoining the line of Canal—the erecting of Bridges across the Canal, &c.,—and appoints Lt. Schalch Superintendent of Canals in Bengal, and Agent for the preparation of Suspension Bridges, and names a Committee under whose control Lieut. Schalch will act, as suggested in the Report of the Committee, and adverts to some minor details, particularly to the 18th para. of the Committee's Report relative to the construction of a Tunnel

as proposed by the late Mr. Blechynden, as an experiment calculated to show how far the advantage of such a system of Drainage would counterbalance its expense, and the Governour General in Council says that the suggestion will be referred for Report to the Magistrates of the Conservancy Department, who will obtain and submit to Government a detailed estimate of the probable expense of the work, with their opinion as to its utility.

Your Committee obtained from Mr. McFarlan, late Chief Magistrate of Calcutta, a Report by A. H. Blechynden, Esquire, dated 7th February 1835, preserved in the Office of the Chief Magistrate, containing details of a Plan for the construction of a Tunnel from the river Hooghly to the Circular Canal for the better Drainage of the Town of Calcutta, through which the proposed Tunnel is to pass.

This Report is printed in Appendix D. to your Committee's first Report.

It appears from the Resolution of the Governour General in Council, above-mentioned, that the Mr. Blechynden, who had made the suggestion to the Committee upon Lieutenant Schalch's Plan, was dead on the date of that Resolution in 1823. He was Superintendent of the Roads in Calcutta. His name was Richard. He was succeeded in that Department by his son Mr. A. H. Blechynden, compiler of the Report, dated twelve years afterwards, which your Committee received from Mr. McFarlan. But except the obtaining this Report, no step has been traced as taken by the Magistrates of the Conservancy Department with reference to the Drainage of the City.

The recommendation of Mr. A. H. Blechynden, was confined to the construction of one Tunnel from the westward, in the centre of the Road through Neemtollah, the proposed line of which he describes in the detail of his Plan above-mentioned.

The proposal of Mr. R. Blechynden, the father, was, that a large Tunnel be made across the City at every 2,000 feet, or as near to that more or less as the situation of the streets would permit, and it was the construction of one of these Tunnels as an experiment that the Committee on Lieut. Schalch's Plan recommended to Government. Your Committee have not ascertained that the Plan suggested by Mr. A. H. Blechynden, ever emerged from its obscurity in the Chief Magistrate's Office, till obtained by your Committee, and certain it is that no step was ever taken, so far as they can learn, towards the carrying either Plan into execution.

On the 31st March 1823, the Committee upon Lieut. Schalch's Plan, addressed a letter to the Secretary to Government, transmitting their Supplementary Proceedings on the Soondurbun Canals, containing information collected since closing their Report, dated 28th October preceeding.

Adverting to the details recorded in the Proceedings, and to their investigations on a line of Canals proposed to be established between Calcutta and Saugor Island, and to the recent fluctuation of the Indian funds, they submitted to the consideration of the Governour General in Council, observations in continuation of their Report on the Soondurbun Canals.

They advert to the paragraphs of their first Report, in which particular advertence was made to the state of the Navigation through Tolley's Nullah, of which they state that, however appropriated, the Channel must be improved to render the Navigation free, and supposing this accomplished the passage would continue ill adapted for the Import and Export trade of the City of Calcutta, particularly so in respect to all articles destined for the consumption of the inhabitants of the City, such as grain, salt, firewood, and other gruff goods.

First Report, Appendix (D) page 230, No. 24

Appendix (D) page 230.

App. to App. (G) page lxxvii.

Ibid, Paper marked G page ccxxv.

Ibid, page xxviii.

Impressed with a conviction of the inadequacy and unfitness of Tolley's Nullah for the transit of the trade, they had strongly recommended the formation of a Canal across the Salt Water Lake and around the Circular Road to the river Hooghly at Chitpore.

They then go into details regarding the Tolls which may be expected on the proposed line of Canals, between Koolna and the river Hooghly at Chitpore, and the augmentation to which they might fairly be subjected.

App. to App. (G)
page ccxxvi.

On the 23rd April 1823, both Reports, one of the 17th February regarding the Canal between Calcutta and Saugor, and the Supplementary Report of the 31st March regarding the Canal between Calcutta and Koolna, were taken into consideration by the Governour General in Council, who came to a resolution, in which he observes, that the facts and observations contained in the supplementary Proceedings and the Report of the Committee in regard to the Canals to be constructed between Calcutta and Koolna, all tend to confirm the already assured persuasion of the expediency of the work, and that they do not suggest to the Governour General in Council any modification of the Orders already passed in regard to the work above mentioned. In regard to the Report of the Committee on the Canal proposed to be cut from Tolley's Nullah to Channel Creek, with a branch leading to Diamond Harbour, the Governour General in Council remarks that it is full, clear, and satisfactory, and appears to him to afford conclusive proof that the work will be one of great public utility, and that it will yield to Government a large return for the Capital expended.

Ibid, Paper marked H. 1. page ccxlvii.

With this conviction, the Governour General in Council does not hesitate to resolve that the work shall be undertaken; but he remarks that, until the new Canal through the Salt Water Lake should be opened, Tolley's Nullah must apparently continue to be crowded with Boats passing to and from the Eastern parts of Bengal—that it seemed certain that the Nullah, even when cleared of the obstruction which now hinders the Navigation, would not suffice for both branches of trade; hence a doubt occurred to him whether the Saugor Canal should be immediately commenced or postponed for a time.

The Governour General declares it to be the intention of Government, to confide the Superintendence of the Work to Lieutenant Schalch, under the controul of the Committee appointed on the 20th ultimo, and that the Governour General in Council will be guided by the opinion of the Committee, in determining the period at which the work in question shall be commenced.

App. to App. (G)
page ccxlviii.

On the 20th March 1823, W. Paton, Esq., 2nd member of the Board of Revenue L. P.; H. Shakespear, Esq., Superintendent of Police; C. Barwell, Esq., Magistrate, Suburbs of Calcutta; and Captain W. Swinton, Superintendent of Public Buildings L. P. were appointed a Committee to controul and direct the execution of Lieutenant Schalch's Plan of a line of Canal from the river Hooghly to Koolna.

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No. 1.

From the Circular Road at Entally down to the Salt Water Lake, near where Lieut. Schalch's Canal through the Lake was intended to commence, there existed an old Canal called the Balliaghat Canal, executed in 1809.

App. to App (G)
E. 14. page lxxviii.

Appendix (G)
page 31.

Index to App. (H)
No. 63 a. and No. 72.

Index to Appendix to Appendix (H) No 191.

Complaints of the obstruction of this Canal by a quantity of mud and filth poured into it by the Town Drains, were made to the Government by the Collector of the 24-Pergunnahs, Mr. Brown. This complaint and relative Papers were transmitted by order of Government to Lieut. Schalch, who reported thereon on the 5th April 1823. His Report was transmitted

Index to App. (H) No. 14 to 14 inclusive.
Ibid—No. 2, No. 2 a. and No 2. b.

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by Order of Government to the Canal Committee on the 10th April 1823, and on 23rd April the measures proposed by Lieut. Schalch were authorised to be carried into execution.

From the centre of this Balliaghatta Canal, the Canal called the Circular Canal, part of Lieut. Schalch's Plan, was executed to the River Hooghly at Chitpore, and its continuation through the Balliaghatta Canal to the Salt Water Lake cleared from obstruction. The Canal proposed by Lieutenant Schalch was formed, and a Cut made according to his Original Plan from thence to a place called Bahminghatta, about 6 miles from the end of the Salt Water Lake. From thence his original Plan was partially departed from, by adopting a shorter route than that projected, to a place called Chultabariah, from whence his line was continued with some small variations, and the Canal excavated to Hoseinabad, upon the Juboona River, where it stopped.

The Canal Committee on 10th June 1823, in a Letter to the Secretary to Government, had recommended that both Canals, that to Koolna and that to Saugor, should be commenced upon immediately after the ensuing rainy season. Of this the Government approved by Letter to the Committee of 12th June 1823, and they appointed Captain Taylor and Captain Prinsep, Assistants to Major Schalch, the former on the Saugor, the latter on the Koolna Canal.

On the 30th July 1824, however, the Secretary to Government addressed a Letter to the Committee for reporting upon Lieut. Schalch's Plans, in which he states that he is directed to inform them, that the Governour General in Council has resolved that all Publick Works likely to occasion any considerable disbursement, and which are not of indispensable necessity, or such that the discontinuance of them would be seriously detrimental, shall for the present be suspended; and with reference to that Resolution to communicate to them, that the Channel Creek and Diamond Harbour Canal not having, it was understood, yet been commenced on, His Lordship in Council had determined that all measures towards the completion of it should be postponed until further orders,—and that it further appeared to the Governour General in Council, that the further prosecution of the Canal from Calcutta to Koolna ought for the present to be suspended, though His Lordship in Council was fully sensible of the general inconvenience incident to any delay in the completion of so useful a work.

It appears from the Extract of the Proceedings of the Governour General in Council under date 23rd July 1824, that the cause of this suspension of Publick Works, was the probable extent of the charges consequent on the War with the Burmese.

In his Letter to the Committee, the Secretary to Government says, that, before passing any final orders on the subject of the further prosecution of the Canal from Calcutta to Koolna, the Governour General in Council desired to receive from them a succinct account of what had been done, and a report of what reduction of establishment could be made on the supposition,—1st, That the further prosecution of the Canals was entirely suspended; and, 2nd, That the Works were only partially discontinued, if the latter course should appear to them most proper.

On the 19th October 1824, the Committee accordingly obtained from Major Schalch a statement of the then present condition of the Publick Works under his Superintendence, under the heads, 1st, of the Iron Bridges; 2nd, of the Canals.

In reference to the Diamond Harbour Canal, Major Schalch states, that a Minute Survey of the Country, with accurate levels from the Hooghly at

Index to App. (H)
Nos. 13, 15, 18.
Appendix (H)
page 110.
Addenda to App.
to App. (H) No.
VIII. page xi.

Index to App. (H)
No. 8, and 11.

Appendix (H) No.
27. a. page 10.

Ibid, page 11.

Appendix (H)
No. 28, page 12.

Appendix (H)
page 15.

Kidderpore to Rangafulla, had been made, with observations and comparisons of the rise and fall of the tide at Diamond Harbour and Calcutta—that the levelling of so great a distance as that between Chandpaul Ghat and Diamond Harbour was necessarily a tedious and laborious, although an indispensable, operation—that Captain Taylor had however conducted it with much skill and assiduity through a country generally unfavourable, and had collected information which, combined with what he, Major Schaleh, already possessed, was sufficient for commencing immediately upon the Canal whenever Government might order it to be undertaken.

Upon the great Eastern Canal, Major Schaleh reports the operations in which he had been engaged, in detail. And in conformity with the instructions conveyed in the Letter of the Committee to him, and after a most mature consideration of the subject, he begged leave humbly to submit his opinion, that the success of the Canals in question would be endangered by a present cessation of their progress; and he states, as the grounds of his opinion, considerations which must have appeared incontrovertible, amongst which his own accumulated information, acquired during ten years from his own personal Surveys and Observations in the minutest detail, and the precariousness of his life, he thinks the Committee will probably not regard as the least: and he proceeds to show that the work was then more urgent, and more indispensibly necessary, than when it originally received the sanction of Government.

Appendix (H)
page 18, Para. 48.

He then proceeds to lay down in detail a Plan for the future execution of the Work. Along with his Letter he transmits a copy of a Letter from Captain Taylor to himself, dated 28th August 1824, transmitting Maps and Surveys executed by him, with reference to the construction of the proposed Canal to communicate with the New Anchorage, Diamond Harbour Creek, and Tolley's Nullah, and Observations made by him in conducting the Survey, relating to the nature of the Soil, and other matters likely to come under discussion before the Canal Committee, and the levels taken at high and low water tides from Chandpaul Ghat downwards, and his Plan for conducting every part of the Excavation.

Appendix (H)
No. 28. a. page 20.

On the 18th November 1824, the Canal Committee addressed a Letter to the Secretary to the Government, transmitting a copy of Major Schaleh's Report to them, with their observations thereon, upon the subject of the Canal operation. They express their extreme regret in regard to the Canal to Diamond Harbour, that, after all the trouble and expense incurred, Government should come to the determination of postponing the prosecution of that important Work.

Appendix (H)
No. 29, page 26.

On the 24th December 1824, the Secretary to Government addressed a Letter to the Canal Committee stating, that he was directed by the Governor General in Council to acknowledge the receipt of their Letter of the 18th ultimo, together with the Report and Plans, and to communicate to them that the Survey of the proposed line of the Diamond Harbour Canal appeared to have been executed by Captain Taylor in a very satisfactory manner, and that His Lordship in Council saw no reason to think that the benefits of that Work, or the facilities for executing it had been overrated—but that, since at present neither the services of Captain Schaleh nor those of Captain Baker were available for the Work, it appeared, independently of financial considerations, expedient to postpone it. It appears that the services of Captain Schaleh and Captain Taylor had been placed at the disposal of the Commander-in-Chief, and Quarter Master General. Upon what service Captain Baker was employed does not appear.

Appendix (H)
No. 30, page 36.

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The Letter proceeds to say, that the early completion of that part of the Eastern Canal which runs through the Salt Water Lake, appeared to be an object of very considerable importance, even though the rest of the Work should be suspended—that His Lordship in Council concurred, however, with the Committee in thinking it advisable, if practicable, to carry on the General Plan on a modified system of operation—but he regretted, that it was impossible at the present moment to spare the services of Lieutenant Prinsep for the purpose, and that Captain Schaleh's attention must be, for a time at least, exclusively directed to the duties he had to discharge under the Orders of the Commander-in-Chief. Unless, therefore, the Committee should be able to find a substitute for Lieutenant Prinsep among persons not in the service, His Lordship apprehended that the scale of operations in the ensuing year must be restricted within still narrower limits than they contemplated.

After Major Schaleh's death, Captain Taylor was requested by the Canal Committee, on the 25th March 1825, to obtain from the Executors of Major Schaleh, all Papers, Documents, Plans, &c. relating to, and connected with, the Iron Bridge Department, which might be found among his Papers; and on the 11th April 1825, Captain Taylor forwarded to the Canal Committee various Maps, Plans, &c. which he had received from the Executors, and also the Private Journals of Major Schaleh, which were entrusted to him for examination, in order to ascertain if they afforded any information likely to be useful to Government.

On the 21st March 1825, the Canal Committee inform the Secretary to Government that they have not been able to meet with an Uncovenanted person qualified to undertake the Eastern Canal Works.

On the 3rd November 1825, the Canal Committee wrote to Lieutenant Prinsep, putting certain questions to him relating to the Canals carried on under his immediate Superintendence in the neighbourhood of Hoseinabad. Their Letter is signed by Captain Taylor, who it appears had become Officiating Secretary to the Canal Committee. On the 8th December 1825, Lieutenant Prinsep returned an answer to the above queries.

In a previous Letter to the Committee, of the 13th November 1825, Lieutenant Prinsep had suggested the advantage that would accrue from his personally visiting the seat of his former operations at Hoseinabad, to ascertain the present state of the Work left unfinished after the season 1824; and in his Letter of the 8th December 1825, he says that, if his avocations in the District of Chittagong, where he then was, allowed him the leisure, he should in no way grudge either the trouble or expense of a visit to the spot; stating that the Committee might rely upon his communicating any thing in his power in elucidation of the several points mentioned, and upon his anxiety to gain the information for his own satisfaction.

These Papers being communicated to the Government, the Committee were informed on the 29th December 1825, that Lieutenant Prinsep would be directed to Survey the unfinished Cuts of the Koolna Canal; and on the 14th September 1826, they were informed by the Secretary to the Government, that Lieutenant Prinsep had been directed to place himself under their orders; but on the 9th October 1826, the Secretary to Government, after stating that the Governour General in Council had been pleased to authorise Lieutenant Prinsep to draw a salary of 1,000 Rupees per mensem exclusive of his Military pay, as recommended by the Committee, and to entertain a certain establishment, and requesting the Committee to issue such instructions as might seem necessary to Lieutenant Prinsep, proceeds to in-

Appendix (H) No.
33, c. page 38.
Ibid, No. 33. c. (1.)
Ibid, No. 33. c. (2.)
Ibid No. 33. c. (3.)

Index to Appendix
(H) No. 32.

Appendix (H) No.
35, page 45.

Ibid, No. 43, page
52.

Ibid, No. 37, page
47.

Ibid No. 44, p. 55.
No. 45, p. 57, No.
48, p. 59.

Ibid. No. 50.

from the Committee that the Eastern Canal being a work of the greatest importance, both from its admitted utility, and the return which it was expected to yield for the sums expended on it, would of course claim the earliest attention of the Committee: adverting, however, to the orders which have been received from the Honourable Court of Directors on the subject of this work, His Lordship in Council considers it proper to direct that the further progress to be made in it shall for the present only extend to purchasing the Land, which may be requisite to ensure its ultimate completion, when the numerous advantages of the Work, which have been submitted to the Honourable Court, shall, as is confidently anticipated, have induced them to give their full sanction to the undertaking.

Appendix (11)
No. 50. page 61.

On the 23d November 1826, however, the limitation imposed upon the Committee to limit their progress in regard to the Eastern Canal, to the purchasing the Land that might be requisite to ensure its ultimate completion was relaxed, and the Secretary to Government under that date writes to the Canal Committee, that if any Land be purchased that season, an arrangement may be made for continuing the Canal progressively to the Westward.

The Committee acted upon this suggestion, but the part of the Canal approaching to Hosynabad was not finally completed according to Major Schaleh's design.

The part called the Bhowanipoor Canal was to fall into the Gobra Khal, and from thence was to be continued by what was, and is now, called the Bayley Gunj Canal to the Chandpoor Khal, where it joins the Kulwar Khal—The Gobra Khal and Kulwar Gunj communicate with the Sea, forming a junction at the Colsha Khal—The Hosynabad Canal was to bring the water of the Ishamuttee, or Juboona, River, into which the tide rises, into the Bayley Gunj Canal, where it joined the Kulwar Gunj, which as above said, is the continuation of the Chandpoor Khal, and its communication with the Sea.

It appears from Captain Prinsep's Letter, dated Chittagong, 8th December 1825, to the Secretary of the Canal Committee, that he was aware that "the closing the head of the Western branch of the Hoistullah "Avanya, [or Kyontullah Doanya, otherwise called the Kulwar Gunj,] below the origin of the Bayley Gunj cut, formed a part of Major Schaleh's "scheme."

Ibid.—No. 43.
Section 4. page 52.

It appears from Major Schaleh's Minutes, dated 12th December 1823, that it was his intention to close the Kulwar Gunj, on the Southern side of the Canal, by doing which the tide from the Juboona would enter the Canal, and would meet the tide from the Gobra Khal, left open to supply the Canal with water.

Ibid.—No. 21 a.
page 135.

The object of thus shutting out the tide coming up the Kulwar Gunj was to meet an objection arising from fears, which Major Schaleh thought not without foundation, on the part of the Inhabitants of the banks of the Juboona River, that a body of Salt Water would, on opening the Canal, enter that River, greatly to the detriment of the adjacent country. Major Schaleh thought, that, by leaving open the Gobra Khal alone, the water would flow from the Canal into the Juboona, impregnated perhaps in a slight degree with Salt, but not in a degree to affect so large a stream; should this however be found to be the case, it would become necessary to bund the Gobra Khal, in the same manner as the Kulwar Gunj, and allow the Canal to be supplied from the Cheetpore Khal, still further to the Westward.

Ibid

It does not seem to have been apprehended at that time, that any such accumulation of sand by silting would occur in the Bhowanipoor Canal, as to render a rush of water advisable for the purpose of clearing it.

Appendix (H)
page 52, to 54.

In the Letter of Captain Prinsep above-mentioned, he appears favourable to the carrying out Major Schalch's determination to close the head of the Kulwar Gunj. He feared that without this Bund the tide would meet in the centre of the Bayley Gunj Canal under the most unfavourable circumstances, as the Cholkounnee sand-bank must become the point of collision. This case, he says, or a modification of it, must be of most frequent occurrence in the series of cuts. The Bund referred to, if made, would of course annul the objection, and might contribute still further to the advantage of the Canals by insuring a set of tide which it was highly desirable should be uniform, even as far as the Bairmarree Khal, or Choumooh. It might also furnish the opportunity of diminishing the enormous expense required to empty and complete the excavation of the second Cut (the Bayley Gunj Cut) by affording the possibility of introducing a current of water during the Freshes from the Ishamuttee.

Ibid.—No. 51.
page 63.

On the 26th October 1826, Captain Prinsep states, that he had already visited the Hosynabad and Bayley Gunj Canals—that the former had suffered from the sliding of its Banks, by which 4 to 5 feet of its depth had been filled up—that this filling up was not of material consequence, inasmuch as there would be more than sufficient current, when the water was admitted from the Ishamuttee River, to clear it out—he states that the Bayley Gunj Cut was in nearly the same state as when he left in 1824—that he expected the Dam mentioned in his former communication of 8th December 1825, would still be found necessary.

Ibid.—No. 57. a.
page

It appears that Captain Prinsep delivered in an Estimate for executing the Bayley Gunj Canal, and Dam across the Kulwar Khal, and, in his Report of the 28th August 1827, he states, that, from the difference of time in the arrival of the flood tide at the East end of the Hosynabad Canal, and in the Ishamuttee or Juboona River, and the difference of their elevation at their extreme flood, and his having frequently found that, while the fresh water tide (i. e. in the Juboona River) had fallen only 3 feet, the Salt Water tide had fallen $7\frac{1}{2}$, and that the extreme low water of the Salt tide was one foot more than the Fresh, or more, which circumstances accorded with his former anticipation, he now considered the Dam necessary, both to secure the neighbourhood from the great influx of Salt Water, that might otherwise put them to considerable inconvenience, and as a means to excavate the Bayley Gunj Canal, and procure an uniformity of current through its bed. He had therefore included this work in the scheme and estimate of the ensuing season, and should proceed to make instant preparation, so as to commence in October.

Ibid.—No. 99,
96, 97. page

On the 22d May 1828, the Secretary to the Canal Committee transmitted to the Secretary to the Government, a copy of a Letter from Capt. Prinsep, dated 3d of that month, reporting his having been reduced to the necessity of abandoning, for that season, the operations, which he had commenced with every prospect of ultimate success, for closing up the Kulwar Salt River, near the point where it is intersected by the line of Canal constructing under his superintendence. The Committee state, that they had delayed bringing the subject to the notice of Government, till they had ascertained, from Captain Prinsep, how far it would be practicable and expedient, to make another attempt that season towards com-

pleting the Dam, with assistance which he anticipated from certain interested Zemindars. From Captain Prinsep's last communication, the Committee were decidedly of opinion, that it would not at present be justifiable to attempt to prosecute the work. Before the approach of the ensuing working season, the Committee would be prepared to offer, for the consideration of Government, the result of their deliberation relative to the expediency, or otherwise, of reconstructing the Kulwar Dam. In submitting Captain Prinsep's Report, the Committee were anxious to express their opinion, that the failure had arisen entirely from circumstances over which Captain Prinsep could not possibly exercise any controul.

On the 29th May 1828, the Secretary to the Government acquainted the Canal Committee, that the Governour General in Council exonerated Captain Prinsep from blame—that all thoughts however of renewing the attempt at the expense of Government must be relinquished,—and that unless the parties referred to have, or immediately do, come forward with some distinct proposal satisfactory to the Committee and to Captain Prinsep, that Officer should be authorised to excavate the mouth of the Hosynabad Canal without delay. The Secretary to Government intimates a great doubt that the parties interested would agree to bear the charge, since, besides the uncertainty of success, the object in view (a supply of fresh water) could probably be better and more cheaply attained by constructing Tanks.

The Government seem to have considered the preventing the great influx of Salt Water into the Juboona, as the sole object of Captain Prinsep in the construction of this Dam; whereas, upon reference to his Report to the Committee, they would have seen that this was but one, and not the most material, of the considerations which had weight with him—the main consideration being its necessity, from the circumstances he states, to the effecting the excavation of the Bayley Gunj Canal, and the procuring an uniformity of current through its bed—publick objects with which it would not appear that the Zemindars had any thing to do.

It does not appear that any satisfactory proposition was ever made by the Zemindars referred to.

On the 22d August 1828, Captain Prinsep made his annual Report on the Canal operations during 1827-28, in which Report he adverts again, somewhat more fully, to the cause of the unfortunate failure of the Bund across the Kulwar Gunj.

On the 19th September 1829, Captain Prinsep made a Report of the progress made in the different works under his superintendence. Upon the Bhaminghatta Canal, the first Division below the Salt Water Lake, he reports, that the excavations of the year had been entirely successful—that it was then open with Tides which flowed through it into and out of the Lake with some force—and that the manner in which this Canal was laid out by closing all outlets to the South, and thus making the Canal the feeder and outlet for the Lake, would secure the success of this Canal in preserving its depth.

With regard to the next division, called the Bhowanipoor Canal, he observes, that there is a difference of nearly an hour between the first ebb in the two Khals at the two ends, which is likely to induce a set from the Gobra to the Hinshee Khal during ebb tide, which, with the help of the back water in the Bhowanipoor Jheel when opened, and the old Nullah at (F), will effectually prevent any considerable stagnation, and consequent sediment.

It would therefore appear, that up to this point, the danger of any considerable silt to lessen the depth of the Canal, had been avoided.

Appendix (11)
No. 101. page

Ibid.—No. 100,
No. 100, a. No
pages
Ibid.—No. 102,
No. 102. a. 102.
page

Ibid.—No. 118.
page

Upon the next section, the Bayley Gunj Canal, his Report is not so favourable in this respect. "The defects of this Canal," he says, "are I believe already fully known by the Committee. The sandy ridge in the centre, where unfortunately the tides meet, has filled by silting to 3 and $3\frac{1}{2}$ feet below high-water mark, although excavated to 6 and 7." He says, "he had brought the uneven parts, where the excavation had been left incomplete and irregular, to an even bottom, 5 feet below high-water mark, and hoped that much would be gained, *when the Kulwar Bund should create an uniformity in the set of tide.*"

He goes on to say, "that he had already stated that the observed tide in the Gobra and Kulwar Khals had an extreme rise and fall of 11 feet, and, as there was no possibility of shutting out one tide, there remained no method of making this Canal an useful tide passage but by again shutting up the two ends, and excavating it to low-water or near that level—that the defect of silting would still remain to this Canal, as he could not devise any means, within reasonable limits of expense, to provide a head of water in the centre."

It appears from this, that Captain Prinsep continued of opinion that the erection of the Dam across the Kulwar Khal, was necessary to create an uniformity in the set of tide in that part of the Canal, and he refers to the impossibility of shutting out one tide as causing a necessity for again excavating the Bhowanipore Canal to the requisite depth.

Major Schaleh had long before stated his opinion, that the Gobra Khal might without danger or inconvenience be also bunded; and it should also seem, that, the two Khals being bunded, the tide from the Soondurbuns would be completely shut out, and the only tide left to flow into the Canal would be that coming up the Juboona River.

Whether this state of things would cause a sufficient flush of water into the Bhowanipoor Canal to clear it from silt, and would prevent the tides encountering each other in its centre, is a question for Engineers to decide; but it appears to your Committee, that, at all events, the completion of the Bund across the Kulwar Gunj was, in the opinion both of Major Schaleh and Captain Prinsep, a work of absolute necessity.

On the 15th September 1830, Mr. James Prinsep, who had been appointed Superintendent of Canals on the 23d February 1830, in succession to his brother, Captain Thomas Prinsep, who your Committee have learned had been killed by a fall from his horse, in a Letter to the Secretary of the Committee, submitting a Report on Canal operations during 1829-30, refers to the Reports submitted to the Canal Committee in September 1829, for an account of the several works projected for the then ensuing season, and states that the operations of the season were prosecuted in accordance with this Plan, and the greater portion of the work laid out had been accomplished.

He annexes an Abstract of the year's expenditure, and recapitulates the several items; after which he proceeds to explain the circumstances of each.

Of the Bhamungatta Canal, he Reports that the small portion which had remained unfinished was completed at the time of his first visit to the Mofussil Canals in March, when he ordered the Bunds to be cut away—he states that the Cut called the Bhojdiggee Canal, had been very successful, as it carried the strong tide of the Kantatullah Khal through it, so that there was little danger of its becoming filled up.* He states, that the tides of the Kantatullah or Tardah Khals, were nearly simultaneous, so that they met in the new Canal; but as the numerous outlets of the Eastern half of the Lake, which were bunded during the excavation, could easily be re-

Appendix (H)
No. 128, page 107.

Ibid,—page 108-9.

opened should the aspect of the Canal render the stronger Current advisable, he did not think it expedient to propose to throw a Bund across the Kantatullah, as had at one time been suggested by the late Superintendent.

He states of the Chytal Canal, a short Cut recommended by the late Superintendent as a substitute for a longer route through very unfavourable country, proposed by Captain Schaleh—that the Cut was sanctioned by the Committee, and nearly two-thirds completed before he received charge—that were the direction taken passed through a Jheel it was intended to excavate to the depth of fourteen feet, but that the water rose so rapidly that this, with other circumstances, induced him to direct the Bunds to be partially cut away in April, leaving the average depth below the bed of the Jheel six feet—that in May he found the Cut very serviceable with a depth of seven and a half feet at high-water, and a strong flood current setting through it from the Choumoooh to the Aktratullah Khal and vice versâ with the ebb—that notwithstanding the sandy spit, the rapidity of tide would keep it open, and even tend to cut it deeper—that it passed through cultivated country, and that the largest Boats would find ample water to enter it at the only time when the tide would carry the Craft up or down the Canal; and that at any rate, the choice of passing by the other route remained—that he saw no reason therefore to recommend that the Chytal works should be then resumed, except in so far as was necessary to clear the passage from Bunds, and throw it more completely open to the Currents to and fro of the tide of the Bayley Gunj Canal—he reports that it seemed to him very essential, that the whole line should be completed in one season, as otherwise the higher level of a part of the bed might be expected to spread its contents over that newly excavated, for the Soondurbun alluvion was of so soft a nature, that when moistened with water, it acquired a level like treacle or pitch—that the season unfortunately was unpropitious, hardly once allowing the surface of the ground to be thoroughly dry before the cutting commenced—that from the sliding in of the Banks in these places, and the oozing of sand from below where the section traversed a stratum of sand, it was found impracticable to maintain an excavation of more than 2½ feet in the muddy section, and 4 feet in the sandy—that the rest of the Bayley Gunj Canal maintained the full depth required of 10 feet below the surface, or high-water level, of the country—that there were then 875 feet run of this Canal still unexecuted to the requisite depth by from 3 to 4 feet—that he was by no means confident of the practicability of deepening such a soil in a permanent manner—that this Canal had already been once filled in since it was executed by Major Schaleh in 1824-5,—and that he was inclined to attribute this as much to the oozing upwards of the sandy matter of the soil, as to the operation of silting or deposition of matter held in solution by water which passed through with less velocity on account of the simultaneous tides of the Kulwar Gunj and Bundbeebee Khal.

Your Committee do not find upon Captain Prinsep's Map of the Soondurbuns any run of water denominated the Bundbeebee Khal, they therefore apprehend by this must be meant the Gobra Khal above-mentioned, to which this description applies.

Mr. Prinsep adds, "I would here beg leave to remark, that the Plan of damming up the Kulwar Gunj appears to have been very judicious in theory; as from the large body of water in the Ishamuttee as well as from its connection with the Ganges, there is a powerful ebb current passing hence through the Hosynabad Canal, which would have served to keep both that and the Bayley Gunj Canal open had the Kulwar Dam been experimentally successful. It is the failure of this bold measure

Appendix (H)
page 110.

Ibid.—page 111.

“under the skilful and indefatigable exertions of my predecessors, which, together with the large outlay, prevents my recommending a renewal of the attempt.”

Appendix (H)
page 112.

Mr. Prinsep goes on to observe, that experience had long since proved that Captain Schalch's scheme of a permanent line of Canal crossing the upper ramifications of numerous tide-ways cannot be maintained in such a soil as that of the Soondurbuns with sufficient depth for the Navigation of large Boats; while ample evidence has been afforded that it must soon become a series of tide Channels, passable only at high-water; but he adds, that as long as the apex, if he might so term it, of each section was situated at such a distance from the last as to occupy the period of one tide nearly in the passage of a Boat from one to the other, there would be no great disadvantage in such a system, and to illustrate this proposition, he gives in figures a disposition of the Tide navigation of the line of Canals as far as the Juboona River, showing the number of hours for the passage through the different Channels and Cuts, and for waiting for the change of tide; the result of which is, that starting from the Eastern Canal through the Lake and passing the Bhaminghatta Cut before the tide has fallen too low, you arrive in 12 hours at Chytul, where there is cultivated land to pass the night, and in 12 hours more, being the 2nd day, at the mouth of the Coxalee or Goodlad's Creek, having passed Hosynabad and descended the Juboona River—In this scheme he takes no account of the wind, and moreover has supposed the craft heavy and of considerable draft; with a light Boat, he says, and a favourable wind, the same space may be traversed even in a single day—still it must be confessed, he continues, that nothing is gained in point of velocity by the new route, although one-third shorter than the old Soondurbun passage, for the same tides partially employed in the one case will transport a Boat over the longer distance with equal facility, and he gives a Division of the Navigation by the old route starting from the Eastern Canal and proceeding by the Attra Banka Khal to Rampoor, thence descending to the Roymungul Khal and ascending the Nowyee and Burra Kooleya to the mouth of the Coxalee or Goodlad's Creek, the common point of destination by both routes, which is accomplished by the old route, being a distance of 64 miles in 22 hours without stopping, and by the new route being a distance of 46 miles in 34 hours, whereof 24 are employed in the Navigation, and 10 are passed during the night in the cultivated Land of Chytal. Hence it appears, says Mr. Prinsep, that there is a loss of a whole day (i. e. of 12 hours) in pursuing the new route for all Boats of considerable draught, yet capable of using oars such as Bauleahs, &c. Heavy Boats of burden would probably employ 2 tides in reaching Attara Banka, and thus perform the lower passage in the same time as would be taken in the Canal route. On the other hand, the advantages of the Navigation are such as to ensure it a preference over the deep and dangerous streams of the Soondurbun Forests, even at a little loss of time for the frail Boats which ply from the Eastward, laden with wood, Lime, Fish, Rice, Mats, Thatch, Vegetables, and Passengers.

Thus from Mr. Prinsep's statement it appears, that to the heavy Boats of burden no time would be lost, and to the lighter craft the time lost would be more than compensated by the comparative security. Mr. Prinsep appends a statement (Appendix E.) by which it appears that in the first 21 days of September 1830, an average of nearly 200 Boats per diem passed through the Bhamungutta Canal, and consequently through the whole line, or at least from the Mundaree, varying in size from the Dingee to the 1,000 mds. Pulwar during the month of September, when it must be remembered

that the whole Navigation of the Ganges is diverted from the Soondurbun route, so that it may be expected that the traffick by the Canal will be at least doubled in the dry season. It will be observed that of those 200 Boats per diem, between 34 and 35 per diem were Boats of the large description, and about 24 of middle size, making of these two descriptions together, about 59 or 60 out of the 200, the remainder being Dingee Boats and Saltee Boats, so that at this early period the traffick of all descriptions of Boats by the Canal was very considerable, even during a month when the navigation from the Ganges by the Hoogly for the whole of its course was open.

It is almost certain therefore that this traffick was chiefly supplied from the Eastward, and that the Canal was much used by the larger description of Boat. Your Committee will hereafter lay before your Honour evidence of the amount of the traffick at the present time.

It appears by a Letter from Mr. J. Prinsep of date the 3d December 1830, that, at that early period the greater part of the navigation had been attracted into the New Channel, that he encountered Boats of the largest size on his route, that the Wood Boats from the Roymungul told him that they saved 3 days from their trip, besides the diminution of danger.

In that letter Mr. Prinsep says, that he had deferred writing until he should have revisited the Kulwar Gung, and thus be better prepared to give an opinion upon the subject of the proposed Dam, i. e. the Dam proposed to be erected in lieu of the one attempted by Captain Prinsep which had failed.

He states, that he had already expressed his sentiments to the Committee, that the design was judicious, but that the difficulty of execution and expense appeared to counter-balance the advantages to be hoped for from its accomplishment.

He says, that the question of the Kulwar Dam, resolves itself into the more general one, whether the new Navigation shall be that of a real Canal or of a system of tide passages, as at present.

To render it the former, he says, would involve an expense of full 50,000 Rs. upon the 3 large Bunds, besides their constant protection from accidents.

To retain the present system would cost no further trouble, excepting in the unavoidable repairs which would be necessary in either case, and in the completion of a sufficient tracking path to aid the Boats in stemming the stronger currents.

He was inclined, therefore, still to recommend the Committee to leave the works as at present, at least for a year or two. A further Letter from Mr. Prinsep of the same date, stating some small outlays which he recommended, appears to close his correspondence with the Canal Committee, who, on the 20th December 1830, made over their Records to the Military Board, agreeably to the orders of the Governour General.

Upon the Papers respecting the Circular and Soondurbun Canals being transferred to the Military Board, Lieutenant Col. Galloway in a long Minute expressed himself dissatisfied with the whole project, as defective in design, as holding out no advantages commensurate with the cost, as attended with considerable injury to the Navigation of the Hoogly below Calcutta, and by no means altogether free from danger to a portion of that City.

He goes into a full detail of his reasons for these opinions, and he concludes by stating, that he conceives that the Board has but one duty to perform, and that is to express their decided opinion that the work should be immediately suspended, not merely as Mr. Prinsep designs on the

Appendix (H),
page 129.

Ibid.—pages 129-30.

Ibid.—page 130.

App. to App (H)
pages 1. to x.

Eastern branch thereof, but throughout the whole line of operations from the Hoogly Eastward, that is including the Circular Canal.

App. to App. (H)
pages x. & xi.

Sir Thomas Anburey, the Chief Engineer, merely states that he feels considerable difficulty whether the work ought or ought not to be prosecuted.

Ibid.—page xvii.

But in a separate Minute of date 12th February, he expresses his decided opinion that the Circular Canal ought to be prosecuted to completion, and that the Eastern Canal might be allowed to remain as it was.

Ibid.—page xi.

Lieut. Col. Craigie goes into the question at some length, and, as appears to your Committee, with great judgment. He states truly that the chief advantages, that seem to have been gained by the construction of the works in the Soondurbuns, appear to consist in the diminution of danger from the avoidance of some of the largest Rivers—he might have added from avoiding the passing through savage wildernesses inhabited only by tigers, and destitute of fresh water—and in facilitating communications with particular points in the Soondurbuns.

These appear to your Committee no small advantages.

He refers to the greater part of the Navigation having been attracted into the new Channel, and he concludes, that, from the great difficulty of constructing real Canals in the Soondurbuns, and consequently the little benefit in respect to time derived in pursuing the new route, he thinks it judicious to defer the further prosecution of Major Schalch's Plan for the present; but these considerations did not appear to him to justify a discontinuance of the prosecution of the Circular Canal; on the contrary he would urge the prosecution of it with the utmost energy.

Ibid.—pages xv & xvi.

Mr. McFarlan agrees in these opinions, and by Letter, of date the 22d February 1831, addressed to the Honourable Sir T. C. Metcalfe, Vice President in Council, the majority of the Board expressed their concurrence with Mr. Prinsep in the expediency of discontinuing the prosecution of the Eastern Canals beyond the point they had then reached, and of leaving them in their then state *for a year or two, when a criterion might be formed of their success*, during which period, however, some expense might be advantageously incurred in the clearing and smoothing of Towing paths.

Ibid.—No. 15,
page xix.

A majority of the Board also concurred with Mr. Prinsep in the expediency of carrying on the remaining part of the Circular Canal to completion, with the utmost vigour.

Ibid.—No. 28,
page xxii

In a Letter of the 15th April 1831, Mr. Prinsep informs the Military Board, that having, whilst in attendance upon Lieutenant Col. Tickell, Superintendent of Publick Works, in his visit of inspection to the Mofussil Canals, having had the opportunity of making personal inquiries upon the points referred to them by the Military Board, the information gathered on the spot agreed with the deductions already made, the results of which information he states; and he concludes by saying, that upon the whole the Board would perceive that no time was gained under ordinary circumstances by the Canal route, and that the advantages offered to the Navigation were altogether of another nature, upon which he says he was not called upon then to express his opinion.

Ibid.—No. 26 and
No. 26 b, page
xxi.

It appears, from a statement returned to the Military Board by the Collector, that the number of Boats of all descriptions, which had passed through Tolley's Nullah during the same months of September to March inclusive, amounted to 102 per diem.

Ibid.—No. 28 a,
page xxiv.

It appears, by an abstract framed according to a Register kept under Mr. Prinsep's direction at Kantatullah for the same months, the average of Boats of all sorts per day passing by the new route to Calcutta was 91, and

from Calcutta 177, making together 268 per diem ; being greatly more than stated in Mr. Prinsep's Letter. Of these it appears from the Register that 32 per diem were large Boats above 300 mds.

So that, even at that time, a decided preference appears to have been given to the new route.

It appears that Lieut.-Colonel Tickell, Superintending Engineer L. P., in compliance with the instructions of the Military Board, inspected the New Line of Canals from Hosynabad to Calcutta, accompanied by Mr. J. Prinsep.

His Report of the time necessary to this navigation, and of the State of each part of that Canal at that time, is contained in his letter to the Military Board of the 19th April, 1831. The results he comes to coincide with Mr. Prinsep's. He says that the New Line of Canal is adapted only to the navigation of boats not exceeding 1000 maunds burthen, to which he conceives it affords a communication preferable to that by the old route by the Soondurbuns, in the first place, by avoiding the Roymungul and other dangerous points of the Channel,—secondly, by the small depth of water in which they would be emersed in the event of meeting with an accident, so that the boat and cargo are comparatively secure,—and, thirdly, by the frequent occurrences of cultivated country and villages on the line, instead of the continued jungle which is met with on the old route.

App. to App (11)
No. 34, page xxv.

He says, that in point of time little or nothing is to be gained, except perhaps by Boats which can row against tide—the ebbs and floods being all much more gentle than in the great Soondurbuns. The line of Soondurbun Canals, he adds, is open both to Tolley's Nullah and the Lake exit, and so far may be considered apart from either of these. The preference he says must be given to the Lake route by Fish Boats, and all in fact bringing goods to the Calcutta market, as it will enable them to land their cargoes in the very Town—The remainder, including heavy laden Boats, resort to Tolley's Nullah, the Eastern Canal not affording at present a sufficient depth of water ; but, when the Circular Canal is completed and opened to the river, it is but reasonable to expect that the new route will attract most of the Craft passing through Tolley's Nullah, which will then most probably be used only during the period of the rains, when the Chitpore Locks will be closed against the Navigation during 2 or 3 months—He considers the new line to be as fully and freely navigable then, in 1831, as it could well be made for the passage of Boats not exceeding 1000 mds. burthen, and that, by the Register kept by Mr. Prinsep, it seemed to be used and preferred by them—that it was consequently of considerable publick utility, and that the expense of maintaining it so did not promise to be incommensurate with such a beneficial result.

This Officer, therefore, did not agree with Lieut.-Col. Galloway in his opinion with regard to the defective nature of the original design, or of its total failure in regard to the advantages contemplated ; and from the evidence to be presently submitted to your Honour, it will appear that the opinion of Col. Tickell has proved to be well founded.

It will be observed that the chief, and indeed the only defects, which prevented the advantages of the new route being much more extensive, consisted in the Canal not affording by its original construction a sufficient depth of water for the larger boats, and the deficiency of means to prevent it from silting up in some places.

It should seem to your Committee to be a matter deserving of immediate and accurate investigation, whether these defects cannot be altogether, or at least in a very important degree, removed.

App. to App. (H)
No. 37, a page xxx.

The then actual advantages of these Canals are well set forth in a Letter from Mr. J. Prinsep to Lieut.-Colonel Tickell of date the 5th May 1831, in which he says, that, judging from the Registry of Boats passing through the new Canals, their success might be pronounced complete; and he only states the cost of the new route as having amounted to two lacks of Rupees.

In this Letter he states their great defect to be, that they cannot be made into a single Canal line on account of the Mundaree Chounook, or into two lines without the expensive measure of Bunding the Kullwar, Gobra, and Kantatullah streams. The expense of making these Bunds he had before estimated at 50,000 Rupees.

The evidence of the large returns at present obtained from the Tolls on these Canals will demonstrate, that it would have appeared wholly unworthy of the patriotick wisdom of this great Government, if its attention had been called to the matter, and would have been considered by any private Company, who had embarked in such a work, wholly inconsistent with an enlarged view of their pecuniary interest, to have hesitated for an instant to incur so small an expense for so great an object.

There does not appear ever to have been suggested by any Engineer Officer, who had surveyed the Canals, any difficulty in this undertaking, or any risk of failure, but what is inseparable from every work of the like nature in the like circumstances; and then the question always is, whether, upon a careful and scientific investigation, the probability of success is such as to warrant the expenditure. Your Committee are compelled to say, that it appears to them very singular, that, in the present case, no measure has been taken to decide this question.

In the year 1836-37, it appears from the Military Board's Annual Report of date 2nd May 1837, that the then "Superintendent had suggested, as a permanent improvement to the Navigation of the Soondurbum line of Canals, the damming up a large Creek called the Gobra Khal (one of the Bunds contemplated by Major Schaleh and Captain Prinsep) by which means a considerable body of water would be thrown into it." The Board content themselves with saying upon this in their Report, that, similar attempts on other tide-ways of like character having failed after heavy expense had been incurred, they had received the proposition with caution, and had called for fuller information before they could submit the project with confidence to Government. Whether any further information was obtained, or what was the nature of the information demanded, does not appear from any Report made by the Board to the Government.—But from the Records of their office it appears, that Captain Thomson did furnish them with the further information desired, in his Letter to the Superintending Engineer of the Lower Provinces, of the 12th of April 1837, which will be found in the Appendix. Subsequently Captain Goodwyne made a Report upon the same subject on the 22nd July 1843, which will also be found in the Appendix, but no further step appears to have been taken in the matter. The estimated expense of this Bund was between Rs. 5,000, and 6,000.

The other Bunds which had been contemplated by Major Schaleh, Captain Prinsep, and Mr. J. Prinsep, as necessary to the converting these cuts from a series of tide-ways into a real Canal, do not appear to have been suggested to the Military Board, or to have attracted their attention after the Resolution was adopted in 1831, of suspending the further prosecution of the work *for a year or two*.

In a Despatch dated the 19th September 1837 the Governour General submitted to the Court of Directors a correspondence relating to the Eastern Boitacannah and Circular Canals, and to subsidiary arrangements made under

Addenda to App.
to App. (H) page
vi.

App. to App. (H)
No. 418½ a page

Ibid.—No. page

Appendix (J)
No. XXXVII and
No. XXXVIII.

App. to App. (H)
Supplemental Pa-
pers No. XLVIII.
page

the provision of the Act of the Legislative Council No. XXII. of 1836, for the regulation and management of these lines of Navigation, and the measures he had adopted, with the advice and assistance of a Committee of gentlemen, whose names are entered in the margin of this Despatch.

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Supplemental Pa-
pers No. XIX a.
page

In this Despatch he mentions the sum of one Company's Rupee upon every 100 Mds. burthen as the Toll which had been imposed upon all Boats of whatever description passing through the Canals, and he mentions eight different works which were recommended by the Special Committee he had appointed, whose Report, of date the 26th October 1836, will be found in the Appendix, the first three as indispensably necessary, the remaining five being characterised as great improvements.

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No. 353, b. page

First. The construction of an Iron Dredging Boat.

Second. The general repair of Tow-paths and the Bridging of cuts made for irrigation in various places.

Third. The Bunding of the Gobra Khal, to afford the means of scouring the Bayley Gunj and Bhowanipoor Canals.

Fourth. The rivetting the Main Drains from the Circular Road to the Canal, to prevent the influx of silt.

Fifth. The widening of the Balliaghatta Canal from the junction of the Circular Canal to the extent of 20 feet.

Sixth. The excavation of a Basin at the Salt Water Lake, capable of holding 500 Boats.

Seventh. The closing up of the Kamckera, otherwise, as your Committee understand, called Kamapookerya Khal, with a view of preventing the formation of a bed of sand at the entrance of Tolley's Nullah (meaning at the entrance of this Khal into Tolley's Nullah) and

Eighth. The Dredging out one mile in length of Tolley's Nullah.

The Governour General goes on to say that the gradual adoption of all these works was approved of—that the Military Board was directed to submit Estimates of them—and that the immediate execution of two of them, the Dredging Boat and Basin, was authorised—but the Basin was limited to contain 100 or 200 Boats at an expense of Rs. 10,000 instead of the projected expense of Rs. 21,474.

These works, the Dredging Boat and the Basin, were accordingly executed; but your Committee see from the Military Board's Report that the Dredging Boat was a failure, and has since been sold.

Addenda to App.
to App. (H) No.
XIII. page xvii

Your Committee have not found any evidence of an estimate of the expense of the other works having been submitted by the Military Board to the Government. The trifling sums layed out on the Tow-paths, whether including the Bridging of any cuts made for irrigation or not does not appear, will be presently stated.

No attention appears to have been paid to the order of the Government for an Estimate of the expense of Bunding the Gobra Khal; nor to the like order for an Estimate of the expense of widening the Balliaghatta Canal. These works approved by the Government as either essentially necessary, or as important improvements, were specially connected with the Soondurbun Canal; but have been left from that time to this, nearly 9 years, without further attention being paid to them.

The following is the amount of Tolls collected on the Calcutta Canals, exclusive of Tolley's Nullah, during the years undermentioned, showing the

Appendix (J)
No. XVI. a page
105.

amount of imposts, which, according to the enlightened opinion of the Governour General in Council, recorded on the 20th of March 1823, the Government were bound to "*regard less as a source of direct profit than as a fund to meet the charge of maintaining and extending the Channels of Commercial intercourse,*"—and, therefore strictly applicable to the improvement and completion of this Canal : viz.—

From the 1st of Nov. 1836, to the 30th of April 1837, Rs. 44,778 : 4 : 6.

For the year ending 30th April 1838, Rs. 90,633 : 0 : 0.

During the above two periods the rate of Toll was 1 Rupee per 100 maunds burthen.

From this period the rate of Toll was reduced to one-half or eight annas per 100 maunds burthen, which it was thought the rapidly increasing number of Boats authorised, and indeed demanded.

In the year ending the 30th April 1839, the amount of Tolls received was Rs. 37,406 : 3 : 4. But such was the increased traffick, that the Toll at the reduced rate soon came to exceed what it had been at the higher.

In the year ending the 30th April 1840, the Tolls amounted to Rs. 71,467.

In the year ending the 30th April 1841, the Tolls amounted to Rs. 1,03,364.—

From which time they have gone on rapidly increasing, till, in the year ending the 30th April 1845, they amounted to Rs. 1,38,745—showing an amount of nearly Twenty-eight millions of maunds, or One million of tons, brought by 86,060 boats.

Previously to the improvement of the Lake Channels by Major Schaleh, and the construction of the Circular Canal, the Traffick which came up Tardah Nullah and the Lake Channel to Balliaghata averaged about Two millions of maunds, or 72,000 tons per annum, and yielded, at a considerably higher rate of Toll than the present, Rs. 17,797.

It appears that the average annual Estimated repairs to the Circular Canal, during the last eight years ending the 30th April 1845, has amounted to Rs. 6,065 : 4 : 7, and the average during the same period of the General Current Expenditure, including establishment, Dredging expenses, petty Repairs, and Miscellaneous charges, has amounted to Rs. 23,513 : 10 : 10. This includes the aggregate expenses of Tolley's Nullah, and the Circular Canal which are under the same management, having one office establishment and other items of expenditure common to both.—But the above sum includes the expense of Tow-paths on the Soondurbun Canals, an item separate from the expenditure on Tolley's Nullah, and which must be deducted, being upon the above average Rs. 704 : 13 : 3 per annum, leaving a balance for the aggregate expenses of Tolley's Nullah and the Circular Canal of Rs. 22,700 : 6 : 2. Of this, one-half may be stated against the Circular Canal, being Rs. 11,350 : 3 : 1—This sum added to the Estimated repairs above mentioned, and to the said sum of Rs. 704 : 13 : 3 as the average annual expense of Tow-paths, shews a total expenditure of Rs. 18,120 : 5 : 2 incurred on the Circular Canal.

In the sum, of which the above is stated to be the annual average, are included heavy outlays upon the erection of the Ooltadangha Bridge over the Circular Canal, and the construction of the Balliaghatta Docks, and half of the cost of the Iron Hull of the Steam Dredging machine, amounting in all to Rs. 40,609 : 8 : 6.

App. to App. (G)
Papermarked G. 5.
b., page cclxviii.

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No. XVII. and
No. V. a. page
107.

Addenda to App.
to App. (H)
No. XII. page xvi.
No. VII. page xi.
No. V. page vi. and
No. XI. page xv.

The clear annual surplus of the year ending the 30th of April 1845, during which the expenditure somewhat exceeded the above average, was Rs. 1,25,985 : 15 : 0, derived from the traffick to Balliaghat exclusive of Tolley's Nullah. To this is to be added the amount received from Ferries, Fisheries, and Ground Rent, &c., on the Calcutta and Soondurbun Canals, exclusive of Tolley's Nullah, Rs. 2,340 : 14 : 8, and from Rents from Lands along the Circular and Balliaghatta Canals, Rs. 10,837 : 5 : 9, being for that year Rs. 13,198 : 4 : 5, which, added to the above sum of Rs. 1,25,985 : 15 : 0, shows a total clear profit for the year 1845 of Rs. 1,39,184 : 3 : 5, from these Canals.

Appendix (J) No. XVI. a. page 105.

Ibid.—No. XXXIII. a. page 112 & No. XXXIV. a. page 114.

With this large and increasing traffick, and this amount of surplus Revenue, it appears to your Committee indisputable, that the utmost attention should be paid, not only to the keeping in a proper state, but to the improving by all necessary works, the whole of this important line of Canal; and they think it their duty to bring to your Honour's attention the smallness of the sums, which of late years have been expended upon the *Soondurbun Canals*, and the total want of attention paid, they regret to say, to the necessary repairs, and the keeping them in a navigable condition.

From the Military Board's Annual Report of the 13th March 1835 it appears, that, during 1833-34, the sum expended upon these Canals was Rs. 442 : 11 : 7.

Addenda to App. to App. (H) No. III. a. page iii. Ibid.—No. IV. page iii.

By the Report of 3rd May 1836 it appears, that the only expenses incurred on the Soondurbun Canals was, on the keeping the Tow paths clear of jungle.

By the Report of 2nd May 1837 it appears, that no outlay was incurred on the Soondurbun line of Canal, beyond a charge not exceeding Rs. 867 : 11 : 4 for the same purpose.

Ibid.—No. V. p. v.

In the Report 31st August 1838 the Board state, that regarding the Soondurbun Canals they have only to report, that they believe them to be much in the same state as last year—that they have passed but one bill for making Tow-paths to the extent of Rs. 773 : 5 : 3—and have no estimate of any further expense before them.

Ibid.—No. VI. page vii.

In the Report of 1st May 1839 they state, that the Tow-paths through the Soondurbuns had been ordered to be repaired, and cleared, and maintained in proper order, at an expense of 773 : 5 : 3, which your Committee presume means the sum above-mentioned, and which they state to be less than for former years.

Ibid.—No. VII. page x.

If so, nothing at all was laid out this year.

In the Report of 8th September 1840 your Committee observe, that the Soondurbun Tow-paths are stated to be repaired and cleared at a cost of Rs. 497 : 0 : 3.

Ibid.—No. VIII. page xi.

In 1841, and 1842, and 1843, the Annual Reports make no mention of the Soondurbun Canals at all.

Ibid.—Nos. IX. X. and No. XI. pages xiii. to xv. Ibid.—No. XII. page xvi.

In the Report of 1844 an Estimate, amounting to Rs. 4,368 : 4 : 6, for cutting down jungle, repairing and making Tow-paths, &c. is stated to have been recommended by the Military Board to the Government. This recommendation proceeded upon a Survey and Estimate by Captain Goodwyn, under the order of the Military Board, of the repairs and improvements immediately necessary on the banks of the Canals, in repairing old and making new Towing-paths, cutting Jungle, and Bunding small Nullahs and Watercuts which obstructed them, and driving piles in some places where necessary to secure the banks; this being the first Survey and Estimate of the sort required or made, so far as your Committee has discovered, since these Canals were placed under the Superintendence of the Military

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* An Estimate amounting to Rs. 813:7:8 passed in 1834-35 was charged in 1837—See Addenda to App. to App. (H) page vi. para. 21 and App. I. page 57 & App. J. page 107.

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Board. They were at once sanctioned by Government, and the repairs and new works were executed, under the Superintendence of Capt. Goodwyn, at a cost rather less than the Estimate, which cost forms a part of the General Expenditure of 1845. This is the first outlay amounting in any one year to £100 sterling upon these extensive and important Canals. The average annual outlay for 9 years ending 30th April 1845, including the above sum of Rs. 4,368:4:6, appears to have been Rs. 722:14:10,—no expense but what is included* in this average having been incurred on these Canals during the six year's preceding the commencement of the above period, when the Canals first came into use, i. e. in 1830-31;—but, if these six years be considered as added to the nine years already noticed, the average for 15 years will amount to Rs. 433:12:4.

In the Report of 1845 no mention is made of any outlay, or projected outlay, upon these Soondurbun Canals.

Capt. Boileau, in his Letter to the Superintending Engineer Lower Provinces of the 30th April 1842, states the length of these Canals from the city of Calcutta to the Juboona River, under his Superintendence, to be 50 miles. Although this most intelligent and active officer is, as he says, supposed to have the Superintendence of the whole of these Canals, he says, that, since he received charge of this office from the late Capt. John Thomson in February 1839, he has not found leisure to visit any of the Mofussil Canals, and he rather thinks that his predecessor was in a similar predicament for the two years preceding the time of his being relieved by him. "In fact" he says "the duties of my different offices in Calcutta are onerous, and require such incessant attention, that, during the last two years I have not, to the best of my recollection, slept out of the Canal Office for one single night."

It is evident, that an Officer so overwhelmed with other duties could not bestow an efficient Superintendence upon these Canals; which amounts to saying, that a Canal, upon which little less than £14,000 sterling per annum was levied from the publick in Tolls, no superintendence whatever was bestowed upon, in order to keep it in a state of efficiency for the purposes of commercial intercourse.

Capt. Boileau, after stating some material information regarding these Canals, which he had obtained from his predecessor Capt. Thomson, and also a proposition of Mr. Heatley's, an extensive Soondurbun proprietor, all which will be found in his Letter, states, that he had proposed paying a visit to the Soondurbuns for the purpose of examining the Mofussil Canals, but had never yet found an opportunity of doing so, nor did he see a prospect of his being able to do so; and he thinks that it would be advisable to attach another Overseer to this department to look after these Canals, or rather to supply an Assistant of a superior grade, who should understand Surveying, the taking of Levels, &c.

It will be observed that this representation was made more than four years ago, but your Committee have not found any mention of the appointment of such an Overseer or Assistant.

In a subsequent Letter to Major Fitzgerald of the 11th May 1842, in answer to a question put to him on the 13th May 1842 by that Officer, whether if the proposition made in Capt. Boileau's Letter of the 30th April were sanctioned, it would enable him to visit his distant Canals, and superintend any work that might be required to improve the navigation of them, Capt. Boileau says, that he greatly fears that even the appointment of an additional Overseer to look after these Mofussil Canals would not enable him to leave Calcutta for a sufficient time to Superintend, in an efficient manner, the execution of any works that might be required in those parts.

On the 16th May 1842, Major Fitzgerald, the Superintending Engineer, forwards to the Military Board the correspondence between Capt. Boileau and himself upon the subject of the Eastern Canals, "from which the Board would perceive, that the Superintendent had not been able to visit them since he received charge of his office." "Presuming" he adds, "that this, is a state of things which the Board is desirous to see rectified, I shall, in my promised Report, make some proposition for the Board's consideration, with the view of enabling Capt. Boileau to afford an efficient superintendence to the duties of his substantive appointment." He had previously stated that he had proposed to submit the observations he had made in a late passage through the Eastern Canals, for the consideration of the Military Board, after concluding the other Reports which he had then in hand.

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On the 27th May 1842, Major Fitzgerald submits to the Board his promised observations regarding the Eastern Mofussil Canals, and Capt. Boileau's management of the same. Major Fitzgerald had himself come by these Canals from Hosynabad to Calcutta, starting on the 28th of March then last. He states the particulars of his progress, and the state of each particular Canal which he passed through. He reports favourably of the Hosynabad Canal; but of the Bayleygunge Canal he states, that he looks upon it as a failure, and that it can never be rendered efficient, unless the original intention of the projector is carried out and the Gobra Khal bunded up. He gives his reason for this, and for thinking that if this were done, that Canal would probably become a navigable tide Nullah. He says, that he is aware that a considerable sum of money was some years ago expended in an unsuccessful attempt to close up the Gobra Khal, but that perhaps the large Revenue derived from the Tolls might admit of another attempt being now made to effect so desirable an object to the improvement of the navigation through the Soondurbun Canals; but that, if this is not attempted, he cannot recommend any expenditure being incurred to make the Bayleygunge Canal navigable by excavation,—that it would need such expenditure yearly, and would have to be closed up just at the time that it would be required—that, on account of the alternation of tides, it would never be a satisfactory Channel,—that the line of this Canal is the best that could be taken for this navigation, but that its efficiency is entirely dependent upon the closing the Gobra Nullah, and, if that cannot be done, Boats must go round by some other course, as they now do, to the Bhowanipore Canal.

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He reports favourably of the other parts of the Canals, except the Bhamingattah Canal, which he says is not navigable for boats of burden at low water. He complains much of the jungle which obstructs the Tow-paths, and of one place where there appears to be no Tow-path at all, where he was enabled to proceed slowly by pulling against tide, but where a heavy boat would have had to stop; whereas, by being enabled to proceed against the stream for a short distance by trackings, he would sometimes save the delay of a whole tide. He says he is quite aware that what he has said of the Canals is very imperfect, and that a much more detailed account of them is required,—that it is true that he passed through them in not a very light boat, and reached Calcutta in 30 hours from Hosynabad, but this was done under the favourable circumstance of a strong spring tide—that during the neap tides this rapid progress could scarcely have been effected,—and that it is desirable that the state of the Canals at all times of tide should be known, before their general efficiency can be pronounced upon. He concludes by referring, with respect to Capt. Boileau's management of that portion of his duties, to his own statements in his Letters. Major Fitzgerald says that there is not perhaps much that would constantly re-

quire the Superintendent's attention in the Mofussil; but that the Canals should not be altogether neglected: and he certainly thinks, if they are to remain under Capt. Boileau's charge, he should be placed in a position to afford them an effectual superintendence.

Your Committee will close the observations they have to make upon the Soondurbun Cuts or Canals made to Hosynabad, by calling your Honour's attention to some valuable evidence, which they have received upon their great usefulness, and their present state.

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No. XXV III,
page 118.

Mr. McPherson, a Soondurbun grantee, states, in a Letter to your Committee dated 8th January 1846, after the outlay of Rs. 4,368:4:6, above-mentioned, that the Eastern Canal from Balliaghatta to Hosynabad is much frequented by Boats not drawing more than 4 or 5 feet; but Boats of a larger description are obliged to take a southern Route, though a great number of the larger Boats pass through the Canal when returning empty. He says, that the distance by the Canal is much shorter and safer; but, as it has not been deepened since it was made, except for a short distance about 14 years ago, it has become very shallow at certain places, which he names, and at which Boats drawing 4 feet can only pass through at high-water—that the Canal there becomes dry even long before low-water—and that, to make the Canal really useful, it would be necessary to deepen all the Cuts from Bhamingatta to Hosynabad. He complains much of the towing paths requiring to be kept clear of jungle, and of the slovenly manner in which this work is now done by hired coolies under the charge of a sirdar; and says, that, to keep the Canal in good order, and the towing paths in repair and free from jungle, European Superintendence is absolutely necessary—that in many places no Boats can track along the line—that he made an offer to Capt. Thomson, then Superintendent of Canals, to keep the Banks of the Kooltee Khal clear of jungle as far as his own land extended, and to allow the use of his own Bunds for people towing Boats, provided the actual expense of clearing the jungle only should be paid; but that the amount placed at Captain Thomson's disposal was so small, that he could not allow more than one-fourth of the sum that the labour would cost. “The whole sum allowed for clearing the towing paths, &c., from Bhamingatta to Hosynabad was only 700 Rs. yearly.”

Your Committee understand that this is a distance of 40 miles; and it is certain, from the Reports of the Military Board, that 700 rupees, small as the sum is, was very far indeed from being allowed for this purpose yearly, although, if the outlay of Rs. 4,368:4:6 in one year, 1845, is included, the average outlay of the last nine years will amount to Rs. 722:14:10.

Mr. McPherson says, that one or two Tanks along the line of the *Eastern Canal*, would be of great use—that fresh water is scarce in the Soondurbuns, and travellers depend entirely on the good-will of a few of the Grantees, who have made tanks at their own expence.

He is not aware of any improvement that can be made on the *Southern route* through the Soondurbuns, further than making one or two tanks in convenient places—that the want of fresh water is seriously felt—that many Boats are annually wrecked, and men taken away by tigers, by this route: but that he had only heard of one instance of a man having been taken away by a tiger in the Hosynabad Canal.

Mr. McPherson remarks, that the natural Creeks and Rivers on the line are deep enough for any sized Boats; but, should the proposed Canal from Hosynabad to Koolna be carried into effect (to which your Committee will presently call your Honour's attention) the present Canals

should be made deep enough to allow Boats of the largest draught to pass through; otherwise, on arrival at Hosynabad, they would have to run down the Juboona River, &c., and so on by the present Southerly Route to Calcutta.

Mr. Carey, Superintendent of Narainpore Salt Works, confines his observations, which your Committee regret that he had been compelled to delay transmitting from severe ill health, to the Balliaghat Canal. He states it is now about nine years since he was appointed to Narainpore, and he is happy to state, that the passage from Balliaghat to Narainpore has been very much improved during that period.

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"There are still," he says, "near Balliaghat sunken Boats, and Fishermen's stakes, in parts of the Canal which ought to be removed, but nothing equal to what there used to be in former times; and in his opinion if the Canal could be kept free from these, made wide enough at Balliaghat to receive the number of Boats that come in at certain times of the year, when it is so full that the passage is nearly choked, and embankments or bunds made on both sides with the Jungle cut away for tracking boats, the passage up to, and through the Balliaghat Canal might be made as safe and desirable as possible.

However this may be, it appears quite clear that it is not safe and desirable at present.

Mr. Alfred Harris, a Pilot and also a Soondurbun grantee, in his letter dated 13th January 1846, speaks highly of the advantages of the Chitpore Canal, and the Canal through the Salt Water Lake; but he complains much of a want of attention to keeping the Channels (of the Canals generally) clear of wrecks and other obstacles—of the want of clearing away Churs—of the obstructions from the careless manner in which Boats are laid—of the want of European Overlookers to facilitate the Navigation—of the want of Towing-paths and Bridges over Nullahs—of part of the Canals in the dry season being impassable for Boats above 500 maunds, except on spring tides—of parts being in so bad a state that small fishing Boats cannot pass till half-tide. He says, that the passage by these Canals cannot be used by Boats above 800 maunds, except on very high tides, and even then not more than 3 in 10 pass that way, but more generally by the Attara Banka Route. He says, that the exactions that Boats are liable to at the different Chowkies and Thannas, which are added to the Toll Government imposes, deters native Boats from taking the Canal Route—that the Canals in many places from Balliaghatta to Kamer-gatchy are often obstructed for days together by sunken Boats—that all the Tow-paths are in want of repair—that the want of Bridges over Nullahs and quantity of Jungle on the Banks all obstruct the Navigation, which, with very little cost and better superintendence, would be done away with.

Ibid.—No. XXX.
page 122.

This gentleman states, that the traffick by the Soondurbuns via the Attara Banka passage from Koolna, Chittagong, Burmah, Sylhet, Dacca, and all the Eastern Provinces, is immense in the dry season—that it is one continual transit of Boats of sizes varying from 100 to 6,000 maunds, carrying all descriptions of produce—that the greatest difficulty felt on this passage is the want of fresh water, there being none procurable between Shereghatta and Attara Banka, of which place he is the owner.—In answer to the question respecting the dangers of the passage, he says, he should think that the same dangers exist as in 1822, except that there is a resting place in the Jungle passage which was not in existence in that year, where Boats are free from tigers and can remain in safety in bad weather. It should seem, therefore, to be certain, that, with the exception of this one resting place, this passage is at the present moment exposed to all the dangers which are above described; and, although your Committee have not ob-

tained any evidence of the exact nature and amount of the dangers and inconveniences, which exist in the passage from the Juboona River to Koolna, they see no reason to believe that they are in any degree diminished since 1822, any more than those in the Attara Banka Route.

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XXXII. page 126.

The Secretary to the Chamber of Commerce expresses generally, as the belief of the Chamber, that the works already executed by Government, to maintain a line of communication between the Hooghly and the Ganges through the Upper Soondurbuns, have been of great service to the trade of the country, and that every improvement of that line must be productive of additional benefit.

It appears to your Committee, that this is now the opinion of every person who is acquainted with the trade of the country; but the Secretary adds, that the Chamber does not possess the means of computing the extent of commerce which seeks that Channel.

Ibid.—No.
XXXIII. page
127

Mr. Rainey, of Koolna, to whom Queries were transmitted, having been much engaged and continually absent from home, was unable to reply to them; but Mr. J. F. Hedger, also of Koolna, transmitted such replies. He states, that great advantages have resulted from the Canals already made to Hosynabad, as being a shorter and safer route to Calcutta—that, if a good Towing-path were made, a Canal from Hosynabad to Koolna would be highly desirable—He says, that it is impossible to state the probable number of Boats, or their tonnage, that now come down the Ganges, and so to Koolna on their way to Calcutta during January, February, March, April, and May, but that they are immense in number and tonnage.—He believes that Boats now always take the route from Koolna to Hosynabad, thence to take advantage of the Canals to Calcutta.

This answer, however, must be taken with some allowance; for it appears from Mr. Harris's evidence, that a great many Boats from the Eastern Provinces take the Attara Banka passage. But it is certain that Mr. Hedger is so far correct, that out of sight the greater number of these Boats proceed by Hosynabad. Supposing the highest number stated by Mr. Harris in the time of the year when the number is greatest, 40 Boats per diem, to be the daily number throughout the year, that would make about 14,400 Boats per annum, which take the Attara Banka passage. The total number, upon the average of the last 5 years, ending 30th April 1845, which arrive from the Salt Water Lake, and from the Soondurbuns by Tolley's Nullah, is 88,072; so that at the largest calculation of the number which take the Attara Banka passage, more than 4-5ths of the Boats proceed from Koolna to Hosynabad.

This gentleman is of opinion, that there is very little danger from Koolna to Calcutta through the Soondurbuns, an opinion in which he does not seem to be supported by the other evidence. He says, there is of course danger to the large unwieldy native Boats in the larger Rivers during storms—but that the greatest danger is from Dacoits and other bad characters,—that he himself has seen a Boat cleared out at 3 o'clock in the day,—that robberies take place every year to a great extent, if native reports are to be believed—that there appears to be no Police in the Soondurbuns—that Boats with valuable cargoes seldom go singly, but in fleets on account of Dacoits.

In answer to a question referring to the proposed Rajmahl Canal, this gentleman expresses a doubt whether that Canal would not soon be filled up by Ganges sand; but he adds, there is no sand in the Soondurbuns. He states, in regard to the present Soondurbun passages generally, that all the narrow Rivers are full of wrecks, stumps of trees, &c.—that there is very little

Towing-path, and what there is, is much obstructed by Jungle—that the Chitpore Canal is famous for wrecks which lie there for weeks, and the piles driven in at the sides of the Banks are very dangerous—that a Boat at high-water, when they are not visible, anchoring over them is liable at low-water to have her bottom stoved in—he says all who have been to and from Calcutta via the Soondurbuns are unanimous in their opinion of the negligent manner in which the Darogah and others of the Chitpore Canal perform their duties.

In answer to the first Query put by your Committee, *viz.*—“What advantages have resulted from the formation of the Canals projected by Major Schalch from the Chitpore Bridge, and thence through the Salt Water Lake to Bahminghatta and Hosynabad on the Juboona River?”—Mr. A. Warde, Superintendent of Salt Chowkees, Soonderbuns—says “Increased facility of bringing the produce of the country through which the Canals pass; greater safety to the passage of Boats; and he has not the least hesitation in stating it as his opinion, founded upon observation and experience in his constant passages through the various Soondurbun Creeks and Rivers, that no Boats, that could effect a passage through the Upper Soondurbun or Canal Route, would ever follow that of the lower or Attara Banka Route; for which he gives the following reasons—“Boats,” he says “by the Lower Route are much subject to being wrecked in blowing weather, especially on passing the mouths of the numerous large and deep rivers, which open into the Attara Banka passage, or Lower Route, where there is generally a dangerous swell, and gusts of wind which acting on the round-bottomed country Boats, laden to the very waters edge, sets them rocking and rolling, by which they take in water and become water-logged, and ultimately sink, and the crew are plunged into a deep and rapid river, where alligators of the largest size abound, and, if the crew succeed in getting safe to the shore, they are still exposed to be devoured by tigers, as the greater part of the Lower Route is through a very dreary waste or Jungle, with not a habitation near, or even fresh water procurable.” “The case,” he says, “is widely different in the Upper Soondurbuns or Canal passage, where Boats, not being within the influence of the openings or wide mouths of numerous large rivers, are not subject to sudden gusts or heavy swells; and, in case of their being wrecked by any accident, their cargoes are not all lost, as the Boats are not in deep water. Again there is not such fear of wild beasts, as the greater part of the route is *now* through *cultivated* land, where fresh water and supplies from Bazars are procurable, as well as assistance.” He states the time taken up by heavy Boats in both passages to be about the same, but that Boats of light draft effect the passage in less time by the Upper than by the Lower Route.

It appears by this gentleman's evidence, that Indigo planters and others, who have very large pinnaces well-found in tackle and stores, prefer the Lower Route, as not being exposed to obstructions, and the inconvenience of stopping at low-water between the high wet banks of the Canals; but it is unnecessary to observe, that it is not for this description of vessels, which are very few in number, and are in truth a sort of yachts for the pleasure and accommodation of the wealthy, that these Canals are constructed, but for the safe and easy passage of the Commercial Boats of the country; and the well found pleasure pinnacle has the route which it prefers left at its command.

To the second Question, regarding the local advantages which would be obtained by continuing the Canals from Hosynabad to Koolna, this gentleman states, that these advantages would be increased cultivation—

great advantage to the inhabitants residing in the neighbourhood of the proposed Canal, in respect to the convenience of conveying their produce to distant markets—the draining and irrigating large tracts of land—greater safety—the avoiding of large rivers, especially at those points where several rivers meet—and he thinks a shortening of time would occur by the avoiding of some very considerable bends of rivers.

In answer to the question, whether Boats now frequently or ever take the route from Koolna to Hosynabad, thence to take advantage of the Canal through the Salt Water Lake to Calcutta, he says that much the greater number of Boats do so.

He says, that the dangers and inconvenience of the Attara Banka passage, remain the same as in 1823, except that there are now one or two patches of Land cultivated—he does not think that any material saving in freight would result from completing the Canal from Hosynabad to Koolna, but that a higher rate of Toll would not be objected to.

He does not know the amount of the Trade, but he should say, that nearly *all* the Trade which arrives at Balliaghatta and Panspottah on Tolley's Nullah, comes from Assam, Sylhet, Dacca, and Chittagong, and places adjacent to the Canal—that the portion of the commerce of the country, that may now be conveyed in large Boats, would be likely to adapt itself to the navigation of the New Canal in respect to using Boats of light draft, but that except some Boats from the Upper Provinces, and the larger description of wood, lime, and rice Boats, he does not think there are many Boats that use the Soondurbun Navigation, which exceed 350 to 600 maunds burthen.

This gentleman speaks of the putting the Soondurbun Navigation on a *respectable* footing, as a *National* work of great importance to the increasing Trade from the Eastward.

He doubts, if this were done, whether any great saving in time, by Boats passing through the Rajmahl Canal, from circumstances which he states in answer to Query 10, would result; but he states, as is obvious, that the Rajmahl Canal would be of no use to the Trade from the Eastward; whilst the Soondurbun Navigation is useful, not only to the Eastern Trade, but also to that of the Upper Provinces; and he says no Railway to the Eastward is likely ever to be formed, owing to the country being intersected by numerous rivers, and being periodically inundated.

This gentleman states, in his answer to the 15th Query, that his knowledge does not extend beyond the Canal Navigation from the Eshamuttee River to Calcutta. Within this District, his duty of Superintendent of Salt Chowkees in the Soondurbuns must render him perfectly acquainted with all the matters he speaks of; and beyond this he must possess a very competent knowledge of the disadvantages of the present line of water communication—of the advantages which would result from the carrying on the Canal to Koolna—and of the extent of the traffick with the Eastern Provinces—being in constant communication with the persons navigating the Boats which come up either the Eshamuttee River or the Attara Banka passage—it being, as your Committee understand, his duty to board all the Boats which he has reason to suspect of being engaged in a contra-band traffick in Salt, whencesoever they may come.

In his answer to Query 11, he describes the bad state of the Towing-paths—the necessity of deepening the Canal throughout—the dangers which exist in some parts of it, of which the greatest appears to be at its junction with the Circular Canal, where “Boats, which have come hundreds of miles, and escaped all the dangers of the Road, rejoicing in the termination as they

hope of their labours, find themselves suddenly deprived of all their hard earnings by the *disgracefully* crowded and shallow state of the Nullah." He says, that he has often counted 9 Boats sunk in the course of a day and night.

On the 23rd of March last, at night, three large lime Boats were wrecked, and many more were landing their cargo in the road for want of water; and upon inquiry of the various merchants he learnt, that, from the 1st of December to the end of March, not less than 150 Boats of various kinds had been sunk within that short distance, conveying property estimated at Rs. 50,000.

Your Committee feel assured that your Honour will feel, as they do, that this is a state of things which ought not to be permitted to exist upon a Canal, the publick work of a great Government, the Superintendence of which is confided to publick officers, and from which the Government draws a clear Revenue of upwards of one lack of Rupees per annum, arising from the Tolls exacted from Boats left exposed to these dangers, arising partly from a want of careful management, and partly from an ill judged economy in the expenditure.

Mr. Warde suggests, that the Canal ought to exist as a passage only from the Soondurbuns to the Hooghly, and not as an Import Depot, for which (Depot) separate Cuts or Docks should be made, the situation of which he describes in his evidence, and a plan of which, drawn on Capt. Prinsep's Map of the Calcutta Suburbs, he has sent to your Committee.

In a subsequent part of his evidence, (Answer to Query 15,) he suggests matters worthy of great attention, in order to put and keep this Canal in the most efficient state.

The whole of his evidence is deserving of great attention.

From Mr. Heatley, a Soondurbun Grantee, your Committee have received a valuable paper, in answer to the Queries which they transmitted to him. They will not attempt more than a notice of some of the principal points in it, and beg to refer your Honour to the paper itself, which is printed in the Appendix.

In regard to the system of the Eastern Canal, which he states to be composed of Tolley's Nullah, the Circular Canal, the Balliaghatta Canal, the Lake Canal, the Bahminghatta Canal, and the others ending with the Hosynabad Canal, he states, that the shallowness of Tolley's Nullah renders it little frequented in comparison with the Balliaghatta route, even by Boats coming up the Attara Banka line of Navigation, and taking their choice of passages at Tardah.

He states the complaint of stoppage by the congregation of Boats to be justified by the state of Tolley's Nullah, and still more as regards the Balliaghat and Circular Canals.

He notices the obstructions caused by the Fishermen—by the extortion practised by the Toll gatherers, and in many cases by the Salt Chowkees—by Fishermen's stakes—by Sunken Boats—by Stumps of trees—by the tracking paths, some impeded by Jungle, and others impeded by intervening Khals—and a general want of depth in the system of Canals, especially at places which he mentions.

In regard to Tracking paths, he says the Jungle which extends to the waters edge, prevents the use of the tracking rope in case of adverse tides, and that this grows upon land especially reserved by Government for the construction of Tracking paths—all the Pottahs of the Grantees excepting from the grant a strip of land 60 feet wide bordering upon the Canal. He says, that it is a little too much to expect the Grantees to do for the Government what it contemplated doing for itself; besides which he states, as a

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Ibid.—No.
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reason why the Grantee should be inclined to leave the Jungle on this strip of land, that, left as it is, it serves as a good hedge to cultivated portions of the lot beyond, against the incursions of the predatory Boatmen, a race well known in the Soondurbuns. But he confirms the evidence which has been already noticed of Grantees, in spite of these considerations, having offered, if Government would clear the Jungle in question, to prevent its becoming an obstruction again, and to give their own bunds as Tracking paths—but that the offer was declined, on the ground that the fund set apart for the repair and improvement of all the Canals, being 700 Rs. a year, was inadequate to the disbursement required.

He mentions, as another obstruction to uniform tracking, which your Committee cannot but think might have been most easily removed, the interruption offered by little Khals or streamlets just too deep to be forded, especially where alligators are not wanting, and too narrow to make it worth while to take the trackers on board to the other shore. The greatest drawback, however, to the usefulness of the Canals is their general want of sufficient depth; and he states the parts of the Canals where this defect is the greatest, and the most serious impediment to their usefulness, causing a prodigious loss of time and the greatest inconvenience. The consequence is, that the larger boats, those above 700 maunds, from the Eastward in fair weather prefer the Attara Banka Route, as the less harassing and scarcely more tedious. This gentleman states that “he does not, from what he has seen of it, think the Attara Banka passage dangerous at present—that cultivation is beginning to fringe it on the Northern bank of the line—and that the intervals between the haunts of population are daily diminishing.”

But, however this may be, your Committee think it established by the other evidence, that, unless to well found Boats of considerable size, differing very much from those most in use in this Navigation, the dangers of the Attara Banka passage are very great, and, supposing them to be somewhat exaggerated, they are quite sufficient to make it highly desirable to afford the means of avoiding them. But Mr. Heatley proceeds to say that the improvement of the Canal line is now, he apprehends, desirable upon other grounds than the pure dangers of the Lower Route—that the larger Boats, those above 1000 maunds, and there are some as high as 5000, will naturally prefer the wide Channel and sailing room of broad Rivers, and these will consequently convey the trade of Arracan, Chittagong, and Sylhet; while the more compact and smaller Boats from Dacca, Mymensing, Rungpore, Furreedpore, and Jessore, coming from a higher latitude, will be glad to avail themselves of the route so much higher up, (viz. the Canal Route) and in a nearly straight direction, economising time and ensuring safety—results which will be still further identified if the remainder of Major Schaleh's Canal is carried out by the completion of the line to Koolna.

The remainder of this gentleman's communication contains suggestions relative to the Soondurbun Canals highly deserving of attention.

From a Report made to the Special Committee appointed to examine Lieut. Schaleh's plan by the Board of Customs, on the 8th of August 1822, it appears, that of the traffick in goods imported to, and exported from Calcutta via the Soondurbuns, 19 parts in 20 consisted in the traffick with the Eastern Districts below Bogwangolah. Your Committee see no reason to believe, that the proportional traffick with the Eastern Districts has decreased since that time, but the contrary; and, if this be so, only a part of the importance of the Soondurbun Canals which were projected by Major Schaleh is derived from the traffick with the upper part of the Ganges above Bogwangolah. This may eventually perhaps be better provided for by a Canal

from Rajmahl, or by a Railway. But at least Nineteen Twentieths of the importance of the Soondurbun Canals, if this estimate be nearly correct, must be derived from the facilities they are calculated to afford to the intercourse between Calcutta and the Eastern Provinces.

The circuitous passage, therefore, from Hosynabad to the end of Tolley's Nullah at Tardah has been saved, and considerable danger and inconvenience, for about one-half of the distance to be navigated from Koolna, have been avoided, although not in so complete and perfect a manner as was originally designed, or might with due attention be accomplished. But the inconvenience of the circuitous and dangerous passage described by Lieut. Schalch from Koolna to the Juboona River, amounting at least to one-half of the length, and to an equal degree of difficulty and danger, to which it will be seen that many witnesses have spoken, has been left in the state in which it was at the time when Lieutenant Schalch drew up his Memoir in June, 1821.

Thus the completion of the object which the Government in 1823, after the most careful examination of all the facts connected with it, declared its determination to carry into effect without delay, as one of great importance to the commerce of the country, by opening an easy and permanent communication between the Eastern Provinces of India and Calcutta during all seasons, and a direct line of communication between the River Hooghly and the Ganges navigable throughout the dry season, besides accomplishing objects of great utility independent of this branch of commerce, has been, if not abandoned, allowed to fall asleep for upwards of 22 years, at what cost of life and property to those concerned in the trade it were difficult to calculate.

But from the answer of Mr. Phillips, Assistant Salt Agent at Koolna, to the Secretary to the Committee on Lieutenant Schalch's projected Canals, dated January 15th, 1822, it appears, that "the losses which had occurred in "the Soondurbun Navigation on the Koolna side of Mooktarpore," the precise Navigation left unimproved by abandoning the continuation of Lieutenant Schalch's proposed Canal, "might be averaged at 5 or 6 Boats "annually, during the then preceding 5 years, some from the effect of bad "weather, some others by running on the hidden stumps of trees." Your Committee upon a review of the whole evidence cannot but think this Estimate greatly below the fact. He adds, "that the Salt Boats suffer "particularly from the necessity they are under of moving in all weathers. "Lieutenant Schalch's project would assuredly obviate the dangers of the "present Navigation, inasmuch as the hazardous parts of the Soondurbuns "will be altogether avoided thereby."

It is obvious that this gentleman, in referring to the dangers of the present Navigation, has especially in view the dangers of the Koolna side of Mooktarpore, the dangers which to this time have been left unprovided against.

In Mr. Plowden's answer he says, that "the crossing the Seepsa is "attended with much danger, this part being more infested with tigers than "any other in the Soondurbuns; nor can a Boat with any regard to safety "anchor near the shore; nor is it uncommon to see a bamboo erected with "an inverted pot on the head of it, to mark the place, as a warning to others, "whence some person had been carried off by a tiger. The New Route," he adds, "would certainly remove the aversion of the native Boatmen to the "Soondurbun passage. It would become an object of preference for the "reason assigned above."

App. to App. (G)
E. 21 a. page xciv.

Ibid—E. 24
page xcvi.

It will be observed that the river Seepsa is crossed between Mooktar-pore and Koolna.

The danger from tigers is mentioned, in all the answers obtained by that Committee, as more formidable than that of the loss of the Boat, though this is far from inconsiderable, and they all agree that, if the New Communication were opened, a preference would invariably be given to it.

Appendix to Ap-
pendix (i) Paper
marked E. 21. a.
page xcv.

Mr. Phillips says, "In the Old Route, should a storm occur, the Boats are under the necessity of sustaining its violence at a distance from the River Banks, on the frail security of a native anchor and cable. From the absence of any Tracking ground after leaving the cultivated parts, Boats must of necessity wait at certain points for a favourable change of tide, which, during the stormy season, subjects them to endure a greater portion of bad weather than might otherwise be requisite, and this in the most unfavourable parts of the Navigation. The Dandees (Boatmen) at the same time suffer from their apprehension of tigers—the danger of cooking their provisions on shore, for they will do so in spite of every thing—and the want of fresh water. Not any of these inconveniences are likely to exist in Lieutenant Schalch's New Communication, and it appears to me, therefore, that a preference will invariably be given, unless perhaps in the cold weather, when a few Boats may prefer the present Route."

Ibid.

This gentleman states, that "Hindoo Dandees, starting from Koolna to proceed by the Soondurbun Route to Calcutta, require higher wages than the Mussulmans. If the latter receive Rs. 3 per mensem, the Hindoo demands Rs. 3, As. 8, and Rs. 3, As. 12, or Rs. 4."

He does not state the reason of this difference of wages; but it appears certain, that it is owing to the necessity which the Hindoos suppose themselves under of cooking on shore, and the danger to which this exposes them, which danger the Mussulmans avoid, as they cook on board.

Ibid.—E. 19, page
lxxxvii.

Mr. Wooden, in his Letter to that Committee says, that "Lieutenant Schalch's line of Canals would afford a beautiful safe Navigation throughout the year, free from every danger—that such a route is much required, particularly by the Western Boats—that to them the present Soondurbun passage is full of danger and inconvenience—that the Dandees of these generally cook on shore, but the present route does not afford them the means of so doing—that Lieutenant Schalch's Route would remove all objections to the Soondurbun Navigation—the distance would be much curtailed, and the comforts of the Boat people amply provided for, if the banks were kept clear of Jungle—they would have the option of working all day, and laying to all night, which would be a great inducement to the large pattelahs, &c., and he thinks "the execution of the proposed line of Canals will tend very materially to bring such jungly tracts as are near, or intersect their line of route, into the highest state of cultivation." He states, that "the Mangees (Steersmen) and Dandees of Eastern Boats, both Mussulman and Hindoo generally cook on board, and have no fear which can operate in raising the price of freight, but on the contrary the Western Boat's crew not cooking on board," he states as a circumstance "operating to raise the price of freight."

Ibid.—No. E. 19.
a. page lxxxix.

Ibid.—E. 30, page
cxxx.

Messrs. Stewart and Robertson state to the same Committee that the natives of Benares, who are in the habit of insuring goods to Calcutta, will not take a risk by the Soondurbuns. Now although such risks are taken by Insurance Offices at Calcutta, nothing can shew more strongly than this the Native feeling of the insecurity of this Navigation.

Mr. Dale, Commissioner of the Soondurbuns, says to the same Committee, that the adoption of Lieut. Schalch's Route would tend in a great degree to remove the aversion of Boatmen to the Soondurbun Navigation; for, independent of the saving in distance, it would relieve them from the apprehension of robbers and wild beasts, as well as from the danger of being wrecked upon sand-banks, sunken trees, boats, &c. It would also allow them more frequent opportunities of supplying themselves with fresh water and provisions, and enable them in most cases to dress and eat their victuals on shore, which is of great importance to a Hindoo. This gentleman adds, that, when he had occasion to engage Boats for his own accommodation in the Soondurbuns, several persons, who were before willing to give them on hire, and accompany him, declined doing so on knowing his destination.

App. to App. (G),
Paper marked E.
41. a. page clxv.

Much more evidence will be found to the same effect in the Appendix to the Report of that Committee. It is summed up by that Committee in the following words,—

Ibid.—page
xxxiii.

“The correspondence on this part of the investigation (the Navigation through the Soondurbuns—obstacles—advantages, &c.) has been extensive, and the communications received have tended to establish the opinion generally entertained of the difficulties and dangers of the present route. The preference given to Lieutenant Schalch's Scheme is so decided, that the Committee might confine this part of the Report to a general recognition of the statements in the Memoir. The danger and delay of the passage across the great Rivers in the Soondurbuns, such as the Roy-mungul, &c., are generally admitted. The aversion of native Boatmen to the Soondurbun passage is stated to be strong. The dread of tigers, the privation experienced in the want of fresh water, and of places on shore for cooking, are the ostensible and natural causes of this aversion.”

Your Committee cannot but think, that the feelings of common humanity towards this most laborious and useful class of men, join with considerations of publick policy, in recommending an immediate attention to the removal of these difficulties and dangers.

In regard to the detention and danger caused in bad weather by the necessity of crossing large and dangerous rivers, these are stated chiefly to occur at the junction of the Koolea and Roymungul Rivers—at Bussenpoor [Busuntpoor] on the Juboona—at Taika, on the Kobudduck [Kobaduk]—at the junction of the Minus with the Scepsa—of the Scepsa with the Budder—and at Bullusspoor on the Pussa [Pussur]. The junction of the Koolea with the Roymungul may be avoided by the Canal Route now existing to Hosynabad, and usually is so. But the detention and danger at the other points remain.

App. to App. (G)
Paper marked E.
19 a, page lxxxviii
E. 21 a, page xciv
E. 40, page cxlv
E. 41 a, page
cxlviii E. 44 a,
page clxiv.

Your Committee are of opinion, that, in considering the advantages of avoiding the passage by the Attara Banka, too exclusive an attention has been directed from the first to the facilitating the Navigation between Rajmahl and Calcutta during the dry season, with the view of facilitating the Commercial intercourse between the Sea and the Upper Provinces. But, important as this object is, the Government of 1823 does not appear to have lost sight of the importance of *an easy and permanent communication between the Eastern Provinces and Calcutta, and other objects of great utility, which would be accomplished by the opening of the proposed line of Navigation to Koolna.* *

Of the amount of the traffick between Calcutta and the Provinces Eastward of the River Hooghly, below Bogwangolah, your Committee have not been able to obtain any accurate account. But it is only neces-

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st the eye upon the Map, and to consider the vast extent and these Provinces, including Assam, to be satisfied that its amount is very large.

believed, that the whole, or nearly the whole of the commodities, their way by water carriage from this vast tract of country to Calcutta for consumption or exportation, must come by Koolna, and from thence through the Soondurbuns by the present dangerous and precarious Navigation, either through Tardah Nullah and Tolley's Nullah, or, proceeding up the Juboona to Hosynabad, and thence taking advantage of the Canals, pass through the Lake Channel.

Your Committee have already stated the number of Boats and amount of Tonnage which pass annually through the Lake Channel.

Appendix (J.)
No. XVI a. page
105.

The total number of Boats which entered the Circular Canal from the Salt Water Lake, from the 30th April 1840, to the 30th April 1845, amounted to 3,37,610, showing an annual average of 67,522.

The number of Boats entering Tolley's Nullah from the Soondurbuns during the same period, was 1,02,750, showing an annual average of 20,550, making an average of 88,072 Boats, which arrived at Calcutta through the Soondurbuns.

Ibid.

The number of Boats entering the Circular Canal from the River Hooghly for the above period, has been 76,360, showing an average of 15,272 per annum. The entire number of Boats frequenting this Navigation during the last five years has been 4,13,970, showing an average of 82,794 Boats per annum.

App. to App. (G)
Paper marked E.
65 b, page ccxviii.

What proportion of these consisted of Boats coming down from Rajmahl in the dry season, and what proportion of Boats laden with the produce of the Eastern Provinces, your Committee have no means of determining. But they have already observed, from the Report of the Committee in 1822 upon Major Schallch's Plan, that about Nineteen Twentieths of the total number of Boats passing Koolna at that time was estimated to have come from the Eastern Provinces. They think it may be safely concluded that a larger proportion of the whole number must come at present from these provinces, when it is considered that they have greatly increased in extent, and must have improved in cultivation.

It cannot, therefore, they think be doubted, that the advantage to the traffick with the Eastern Provinces alone would be quite sufficient to warrant the necessary outlay for the improvement of these Canals, laying entirely aside the consideration of any increased facility of intercourse with the Provinces above Rajmahl; and it will be observed, that the execution of Major Schallch's Canal all the way to Koolna, as he proposed, remains at this instant sanctioned by the Court of Directors, by the order dated 11th of July 1827 above mentioned. (Supra page 3.)

To what extent this latter intercourse by the Soondurbuns might be superseded by the line of Canal proposed by Col. Forbes, or by the Railway now projected, your Committee do not think it necessary to consider in investigating the advantages of the Canal to Koolna, for the reason they have stated;—but they may observe that, if Col. Forbes' Canal were adopted, it is stated by the Projectors of that Canal that the preparing the surveys and sections would require two seasons, and that from the time of first breaking ground to the completion of the work would occupy eight years; so that, if resolved on to-morrow, it would be ten years hence before the Canal would be open—whereas the Canal to Koolna might be completed in a very short time, and the advantage of the communication in the dry season with the Upper Provinces for the intermediate space of time would be far from inconsiderable.*

[Vide printed
Letter of Rajmahl
Canal Committee
dated 29th November
1841, to the De-
puty Secretary to
the Government.]

* See App. (I)
No. 48, page 73.
para. 4.

If the Railway is looked to for completing this facility of intercourse, it seems far from certain when this object will be fully attained; and there are some Valuable Articles of Export from those countries which it would seem difficult to transport by a Railroad—such as Timbers of large dimensions; of which a large amount, both in quantity and value, is annually sent down to Calcutta by the Ganges and Hooghly. One gentleman, Mr. Barnes, reported to the Committee of 1822, that he had himself been a sufferer to the amount of lacs of Rupees from valuable fleets of Timbers being left to the almost certain destruction of the Ganges, from not being able to enter the Bhaugaruttee, Jellinghee, and Mattabanga for want of water; and in a recent instance he had a fleet of 46 Boats entirely swamped.

App. to App. (G)
Paper marked E.
26, page ciii.

The importance of the traffick between Calcutta and Dacca passing by Koolna is well stated by Capt. F. Jenkins in his Letters of the 16th of April 1832, and 29th of June 1833, to the Military Board, in answer to their request that he would favour the Board with such observations as he might have had an opportunity of making on the state of the new Canals in the Soondurbuns, and the Entally Canal. In one of these Letters, Captain Jenkins calls the notice of the Board particularly to some obstructions and dangers to Navigation between Koolna and Dacca, which appear of great importance.

App. to App (H)
No 87. and No.
127. page.

Although beyond the limits of the line of Canal strictly referred to your Committee, they cannot help calling your Honour's attention to this part of the Navigation, as intimately connected with that Canal, and they would humbly suggest, that a survey and investigation should be set on foot, as recommended by Captain Jenkins. That Officer calls the attention of the Board particularly to the great value of the traffick which comes through the Soondurbuns—to the total inadequacy of Tolley's Nullah and the Entally Canal, to allow the immense tonnage employed in its transport to pass backward and forward, and to reach convenient wharfage at Calcutta or in the Suburbs—and to the probability of this trade being shortly greatly increased by the extension of cultivation throughout the wastes of the tract in question—as most urgently demanding the completion of the improvements then in hand under the direction of the Board, and the entire and vigilant attention of a Superintendent to conduct and maintain those works, and promote measures for further facilitating a Commerce of vast and growing importance.

A copy of this Letter was submitted by the Military Board for the information of Government on the 1st of May 1832, as containing information which might hereafter prove useful, and they state that they had furnished the Superintendent of Canals with a copy of that document.

Index to App. to
App. (H) No 129.

There the matter appears to have rested from the 1st May 1832 to the present hour.

The expense of completing the Canal from Hosynabad on the Juboona River to Koolna, was estimated by Major Schalch at about Rs. 21,000, by a route which he thought sufficient for all necessary purposes. It appears that the Committee subsequently suggested to Major Schalch an improvement upon the line of this Canal by straightening it between Deacol and Banka [Bankra]—But he was called away before he had time to report upon this, which would appear to have been a very desirable alteration. This was intended as a continuation of a straight Cut from Hosynabad to Deacol proposed by Major Schalch himself, as an improvement upon his first design of following the old passage to Busuntpoor. Major Schalch's improvement by a Cut from Hosynabad to Deacol he estimated at Rs. 60,000. The further continuation suggested by the Committee appears about two-thirds

App. to App.
(G) pages vi, and
xxvi.

Appendix (H)
Nos. 13, 15, 16, and
18, pages 131, to
134.

of its length, and might therefore probably perhaps be taken at Rs. 40,000, additional, making the total cost of the Canal upon the most improved plan, Rs. 1,21,000, (equal to £12,100) or upon the most economical plan, but one thought sufficient for all necessary purposes £2,100.

Your Committee will now shortly state what was done in relation to the Canal from Calcutta to Channel Creek.

On the 25th of July 1822, the Secretary to Government transmitted to the Committee for reporting on Lieutenant Schaleh's Plans, a copy of a Letter from Mr. Henry Wood, proposing a Cut from Calcutta to Channel Creek, together with the Plans and Estimate which accompanied it. The Letter of the Secretary states, that His Lordship in Council was quite disposed to agree in opinion with Mr. Wood, as to the utility of a Canal such as was proposed. But he was desirous of receiving from the Committee a detailed Report in regard to the general advantages of the work, with the suggestion of any improvements of which the Plan might appear susceptible.

It was added, that it was understood that Lieut. Schaleh had carefully examined the tract, through which it was proposed the Canal should run. This Letter, with the other Papers relating to this Canal, your Committee have printed in Appendix to Appendix I.

The Committee forwarded the above Letters and Papers to Lieut. Schaleh.

Lieut. Schaleh in his answer, dated 21st September 1822, stated, that he was some months past partially engaged in forming a Plan similar to that of Mr. Wood—that he had only then completed his inquiries upon the various subjects connected with the practicability of such a Plan—and that he had arranged these in a Memoir which accompanied his Letter.

In this Memoir Lieut. Schaleh states, that he had made out a Plan for a Canal to Diamond Harbour, with an Estimate of the expense, which was privately circulated among the principal Merchants in Calcutta—that the utility of the Canal, and the prospects it held out of a profitable return were universally admitted—but that the general opinion was against its being undertaken by a body of private individuals, on the grounds of the inability of the Government to grant a Charter of Corporation—and that in a country, where the Government had an exclusive interest in the land, works of this nature ought clearly to be undertaken by them, as they would eventually be the chief gainers. He, therefore, begged leave to offer to the consideration of Government the observations which followed, the subjects of which he discussed in their order.

First,—The inconvenience and delay of the present communication between Calcutta and the lower parts of the Hooghly River. These he describes as very considerable, from numerous sands which stretch in many places entirely across the bed of the Hooghly between Calcutta and the Sea, rendering the Channel at those places so shallow that it becomes dangerous for vessels to attempt a passage over them, at even the highest state of the tide, *and the difficulties & dangers of the navigation during the S.W. Monsoon.*

Secondly,—He proceeds to shew, by a reference to the Map, the line of his proposed Canal, commencing with Tolley's Nullah.

Thirdly,—He details his information as to the level of the country, and the relative state of the tides in Tolley's Nullah, in the Hooghly at Diamond Harbour and Rangafulla, the lowest of the sands which he had before mentioned, giving the necessary sections of the country, and showing the respective levels at different seasons of the year, and states of the tide.

Fourthly and Fifthly,—He describes in detail the several sluices, &c. which he proposes.

Appendix to Appendix (1) Paper marked No. 1. a. to No. 1. a. (14) inclusive, pages 1. to v.

Ibid.—No. 1. b. to No. 111. f. page vi, to xciii.

Ibid.—No. 1. b. page vi.

Ibid.—No. 1. c. page vi.

Ibid.—No. 1. c. (1)

Ibid.—No. 1. c. (1) page ix.

Lastly,—He states the expense of the Canal, Sluices, and Harbours, including the purchase of land, and allowing 10 per cent. for contingencies at Sicca Rs. 5,06,217, or rather, there seeming to be a mistake in the addition, 5,06,297.

Lieutenant Schalch's Letter and detailed Memoir, with a Plan showing, the course of the River Hooghly, and the line of the proposed Canal, with sections and levels of the country through which it was proposed to carry it, explanations of the rise and fall of the Tides, Sketches of the Sluices, Gates, and other delineations calculated to explain the Memoir, were transmitted by the above-named Committee to the Secretary to Government, for the consideration of the Governour General in Council. These Papers have been printed, and the delineations lithographed by your Committee.

App. to App. (1)
Paper marked No.
L. d page xvi.

From the Plan it appears, that Channel Creek communicates with the Sea at the end of Saugor Island, to the Eastward of the mouth of the Hooghly, and the different soundings of this Creek are marked upon the Plan; but it does not appear whether Lieutenant Schalch took into consideration, as a probable or possible advantage of this Canal, the proceeding of Ships up Channel Creek, and discharging their Cargoes in that Creek at its junction with the Canal.

The Committee state, that, having been apprised that it was the wish of Government to be furnished with these documents, and with the Committee's opinion on the practicability and expediency of the proposed Plan without delay, *and adverting also to the near approach of the season of the year, at which, if the work be approved, it should be commenced upon*, they had refrained from entering into the same minute course of inquiry, as that which they had prosecuted in regard to Lieutenant Schalch's former Plan, for improving the Inland Navigation of Bengal from Koolna in the Soondurbuns to the River Hooghly near Calcutta—that the execution of the proposed Cut to Channel Creek embraced few points requiring minute or scientific examination—that the details of local information furnished by Lieutenant Schalch were the result of repeated visits and careful inquiries, personally conducted by him—and that, with the information before them, they entertained no doubts of the easy accomplishment of the work in the manner proposed by Lieutenant Schalch.

Ibid, page xvii.

The Committee then notice the principal points of difference between the Plans proposed by Mr. Wood, and by Lieutenant Schalch, suggesting several advantages attending the latter. They state that the expense of the whole work as calculated by Mr. Wood is 9,41,567 Rs., and as calculated by Lieut. Schalch 5,06,217 Rs. The Committee state, that they see no reason to doubt the general accuracy of Lieut. Schalch's Estimates, allowing for the facilities which the work will derive from existing Nullahs, and that they concur with Mr. Wood and Lieutenant Schalch in regard to the publick advantages anticipated by those gentlemen, from the completion of the work.

App. to App. (1)
page xviii.

Ibid.

On the 3rd October 1822, the Secretary to Government addressed a Letter to the Committee for reporting upon Lieutenant Schalch's Plan, acknowledging the receipt of their Letter, together with the Report and Plans which accompanied it,—stating that *the Committee had justly understood it to be the wish of Government to come to a decision upon the subject at an early period, in order that advantage might be taken of the dry season then commencing*—entirely agreeing with them in preferring the Plan proposed by Lieutenant Schalch to that suggested by Mr. Wood—approving of Lieutenant Schalch's Plan and Estimate as the result of much careful and judicious consideration—and concurring with them in opinion

Ibid.—No. 1 c
page xix.

that the proposed work would not only be very beneficial to the community, but would ultimately yield to Government a return more than would replace the capital expended. There were, however, some points upon which, before finally determining upon the undertaking, His Lordship in Council was desirous of receiving further information.

These points are stated, and it is added most correctly that every thing saved or gained to the community may fairly be reckoned as a corresponding benefit to Government, whether Government think proper to share in the gain through a Tax or Toll or not.

Upon the receipt of this communication, the Committee drew up Letters addressed to sundry persons, with queries for distribution, and an abstract of the Plan for opening the Canal. All these Papers and the answers received from the persons applied to, form the Appendix to Appendix I, to this Report.

On the 17th February 1823, the Committee upon Lieutenant Schalch's Plans addressed the Secretary to the Government, submitting, for the consideration of the Honourable the Governour General in Council, the result of their further inquiries on the several points adverted to in his Letter of the 3rd October preceding.

Your Committee have already stated, that, on the 23rd of April 1823, the Governour General in Council resolved, that the proposed Canal from Tolley's Nullah to Channel Creek, would be a work of great publick utility. But, upon considerations then mentioned, among which was the previous opening of the New Canal through the Salt Water Lake, a doubt occurred whether the Saugor Canal should be immediately commenced, or postponed for a time.

The information desired by the Government on the 3rd of October 1822, was given them—the Canal through the Salt Water Lake was opened and carried to Hosynabad, about half the proposed distance between the Salt Water Lake and Koolna— but the Plan of the Canal proposed from Tolley's Nullah to Channel Creek has never been resumed.

Your Committee have already stated, that the proposal offered for consideration by Major Schalch was ordered by the Court of Directors to be carried into execution by order, dated 11th July 1827. This order embraced also the making of the navigable Cut from Calcutta to Channel Creek, upon which the Court of Directors say, that the circumstances in evidence seem sufficiently to establish that it afforded every prospect of a favourable result, and they trusted that, notwithstanding the interruption which publick works might have suffered from the war, this work might be resumed without intermediate damage.

An extract of this Despatch was transmitted by the Government to the Canal Committee, on the 13th of December 1827, for their information. Nothing further appears regarding this Canal, until the 9th March 1831.

In a Despatch bearing that date from the Court of Directors, they state, with reference to a Report from the Saugor Island Society, representing the importance of improving the communication with the Island, and with other parts, either by continuing the Road from Diamond Harbour to Channel Creek, or by a Canal to connect Calcutta with the Lower Soon-durbun passage, that the advantages, which it is stated would accrue from this latter work, were so important, and to the Court of Directors appeared so probable, that they thought that it demanded the serious and immediate attention of the Government.

In answer to this Despatch the Governour General in Council, on the 17th of July 1832, informed the Court of Directors, that, upon reference

App. to App. (I)
No. 1 f. to No.
112*æ*. pages xxi. to
lxxvi.

Ibid.—No. 111. page
lxxvii. to xciii.

Supra. page. 9

App. to App. (1)
No. 1 e page xix.

Supra. page 3.

Appendix (H)
page 92.

Ibid.—No. 94 a.
page 91.

App. to App. (II)
Supplemental Pa-
pers No. LXV111.

Ibid.—No. XLIII½.

to their Advocate General, that officer had stated that the Saugor Island Society had, in consequence of certain failures on its part, become unable to continue its existence by the deeds under which it was constituted, and the Governour General states, that, the repeated attempts of the Government to induce the Mercantile Community to undertake a project for improving the communication between Calcutta and the Lower Soondurbun passage having proved unavailing, it could not be anticipated that they, the Government, would embark in so extensive a work; and that the opening of the Eastern Circular Canal, and the more general employment of Steam Boats in the Navigation of the Hooghly, rendered the object of less importance than it formerly was.

It does not appear that this Despatch was noticed by the Court of Directors till the 25th September 1835, when the Court in a Despatch of that date express their regret that the anticipations in regard to the Saugor Island Society, and the prospects it appeared to hold out of ultimate success, had not been realised.

They add, that they must again express their regret that the efforts of the Government to induce the Mercantile Community to open a water communication between Calcutta and the Lower Soondurbuns had been unsuccessful, while they concurred in opinion, that the employment of Steam Boats in the Navigation of the Hooghly, and the opening of the Eastern Circular Canal, rendered the object of less importance than it formerly was. It will be observed, that although the Court of Directors had authorised the Government in India to resume the work of opening this Communication as a Government work, the Government had endeavoured to throw it upon the Mercantile Community.

Your Committee have not been able to ascertain whether any orders to this effect were received from the Court of Directors, or what the efforts of the Government were, and how employed, to induce the Mercantile Community to undertake this Canal; but nothing further has ever been done regarding it. The Court of Directors appear to have acquiesced in the abortive attempt to throw the undertaking on the Mercantile Community, notwithstanding that their order of 11th July 1827 continued unrevoked; and, although, in their Despatch of 25th September 1835, they considered it of *less* importance than formerly, they appear still to have regarded it as a matter of importance, and to regret that it had not been put in a course of execution. Your Committee think they will be able very satisfactorily to show that this opinion of the Court of Directors is correct.

It should seem that the Court of Directors believed that their original order regarding the completion of Major Schaleh's Canal to Koolna had been carried into complete effect.

Your Committee have submitted to persons most likely to afford them information to be relied on, queries relative to a Canal to Channel Creek.

The answer of Mr. Beckwith, of the house of Cockerell and Co., is decided, that, in the present state of trade, and as regards the external commerce of the country, a Canal from Tolley's Nullah to Channel Creek would be of no use—that in 1822 a large portion of the external trade was carried on by the East India Company in very large vessels, that discharged stock in cargo at Diamond Harbour or Saugor, and a communication between Calcutta, Diamond Harbour and Channel Creek, would then have been a great benefit—but now, from the smaller size of the vessels employed, and the greater ease and safety of the Navigation from the employment of Steam Tugs, every vessel comes off town, and would continue to do so if there

App. to App. (H)
Supplemental Pa-
pers No. XLV₄.

Appendix (H)
No. 91 a, page 91.

Appendix (J)
No. XII, page 100.
No. XIV, a, page
102.
No. XXVI, page
107.
No. XXVII, page
107.
No. XXVIII, page
118.
No. XXXIX, p. 121.
No. XXX, p. 122.
No. XXXI, p. 125.
No. XXXII, page
126.
No. XXXIII,
page 127.
No. XXXIV,
page 128.
No. XXXV, page
132.

was the most perfect Canal communication to an anchorage at Diamond Harbour or Channel Creek.

Appendix (J) No.
XIV. a. p. 102.

Ibid.—No.
XXXII. page 126.

The answer of Capt. Rutherford, Executive Officer of Canals, to the same query, is to the same effect.

The answer of the Chamber of Commerce is to the same effect.

Ibid.—No.
XXX. page 122.

Your Committee are, therefore, of opinion, that, in the present state of trade, and with the use of Steam Tugs, no advantage would be derived to the external trade of Calcutta from the formation of the Canal proposed. Mr. Harris the Pilot, who has been, as he says, in the habit of traversing up and down the River Hooghly all the year round for upwards of twenty years, does not think in the present state of the trade that any Ships would discharge their cargoes at Saugor, except in casual cases of injury and damage—that, even if ships were too deep to cross the James and Mary, only a few boat-loads would be discharged to lighten the ship a foot or two—that Boats from the western side of the Bay and River would never cross the River to enter the Canal at Channel Creek or Diamond Harbour, for reasons which he gives—that, if Government are disposed to facilitate the Navigation of the River Hooghly, he suggests a Canal being formed between Fulta and Diamond Harbour, sufficiently deep to take a ship of 18 feet through, in a flood tide—that ships would use it in preference to risking passing over the dangerous Shoals at the James and Mary and Fulta Sands—that the expense would be less—commerce would be expedited, and time saved—that the distance is but small, being only 5 to 6 miles—and that two good entrances can be procured for the entrance and discharge of ships, one being at Fulta Creek, and the other a little below Krockrabatta Trees—that this passage would be the means of avoiding a number of very dangerous shoals, and sometimes facilitating ships arriving in Calcutta from one to four days.

He thinks the only possible advantage of a Canal to Diamond Harbour or Channel Creek would be to benefit the line of country immediately in the vicinity of which it passed.

Your Committee would humbly press upon your Honour's attention, as a matter highly deserving of investigation, the suggestion of Mr. Harris relative to the formation of the short Canal he proposes between Fulta and Diamond Harbour.

Your Committee are unable to speak with any precision of the advantages which must be derived to the country through which the Canal in question would run, or the advantages to Calcutta from opening a direct water communication with it; but that country is of great extent, and, as your Committee understand, of great fertility.

Appendix (J) No.
XXVIII. page 118.

Mr. McPherson is of opinion, that a Canal from Tolley's Nullah to Channel Creek would be of great benefit, and easily executed—that the traffick from the country South of Calcutta is very large, particularly in the article of rice, immense quantities of which are brought to town for shipment to Europe—that besides this, a large quantity of salt from Tumlook, Hidgelee, and Diamond Harbour would pass through that line—that at present all the salt and other produce can only go, during the North-east Monsoon, by Channel Creek and the Doagra River through the Soondurbuns, a dangerous and circuitous route, which occupies 7 or 8 days in passing through an entire waste, where tigers abound, and not a drop of fresh water being obtainable—that the distance from which firewood is brought into Calcutta at present is upwards of 100 miles—that indeed a large portion of that necessary article is brought from Backurgunge, while, should a Canal be opened to Channel Creek, an immense quantity of fuel would be available within a short dis-

tance of the Capital—that the Canal from Tolley's Nullah to Channel Creek would have no cross current during the whole way, and with a Lock on Diamond Harbour Creek, and perhaps one at Culpee, for the entrance of Boats from the Hooghly, there would only be the tide from Tolley's Nullah, and the other from Channel Creek, which would prevent the frequent deposit that occurs in the Eastern Canal—that a few sluice gates to drain the country would be required—that such a Canal would, in his humble opinion, soon repay the outlay to Government.

With reference to a Canal from Tolley's Nullah to Channel Creek, Mr. Warde says—That very few Boats, except salt and large wood Boats, he hears ever use the route taken by the Steam Vessels passing to and from the Hooghly at Channel Creek through the Soondurbuns to the Ganges, and that he has heard from an old Branch Pilot, that he has seen nine Boats of the latter description lost in one day, immediately on their emerging from the Soondurbuns into the River Hooghly, and that the Canal would obviate such losses. He does not consider the proposed Canal to Channel Creek as materially desirable to the Shipping, except in affording them several contingent advantages during unfavourable periods of the year; but the Canal would be importantly useful in bringing to Calcutta the produce of the country to the south of Calcutta, and would afford, to all the Native Boats [now] proceeding up or down the River, a safe passage at *all* periods of the year. He thinks commodities from Chittagong and along that Coast and from Balasore, and places on the west side of the lower parts of the River Hooghly, would come by the proposed Canal, but not from Dacca, Sylhet, and Assam. Mr. Heatley agrees in opinion with other persons who have been interrogated by your Committee, that a Canal to Channel Creek will never be of use to the Shipping interest,—that, in the light of opening up a communication by which local produce may find its way into the market of the Metropolis, it is his decided opinion, that the benefits to the District, through which it would pass, will fully repay the expense of the excavation—and that the direct Tolls will be pecuniarily compensatory,—that the chief production of the 24-Pergunnahs is rice, and that almost wholly of the finest qualities—that the amount of the production may be estimated when he states that nearly all the Table Rice exported during the late heavy shipments to England and the Continent from Calcutta, known as the Patna, was the produce of this District.

Appendix (J) No.
XXXIV. p. 131.

This rice, he says, is derived from the whole surface of the District, the boundaries of which he describes.

From the description given by this gentleman of the number of water passages, most of them not more than broad ditches, which appear to have water in them only at a particular season, ending in January and February, and of the miserable canoes, made of hollowed trees called Saltees and Dongahs, which form the boatage of the District, it seems impossible to conceive any District more deficient in means of transport.

By such means as the District possesses the produce is carried, some to the Diamond Harbour road, and some to the neighbourhood of Calcutta, from which places it is transported on carts, and probably on bullocks, to the Town.

When it is considered that this District is forty square miles in extent, and is described as so productive of an article in the greatest demand both for home consumption and exportation, and has been found, according to this gentleman's account, upon extensive trials, to be well calculated for the production of Indigo, Silk, and Sugar, it should seem to be an object of undoubted importance to open an easy, safe, and cheap mode of transit from it to the Town and Port of Calcutta.

Appendix (J) No.
XXXV. p. 133.

46 SECOND REPORT OF THE COMMITTEE ON THE

It appears from the Commercial Annual of 1845, containing a Tabular Statement of the External Commerce of Bengal during the years 1843-44 and 1844-45, framed by Mr. Wilkinson, Export Supervisor of the Calcutta Custom House, that the amount of Rice exported in 1843-44 was

To Great Britain	...	...	...	...	...	Mds. 4,85,636
And to France	...	...	...	...	...	17,800

Making a total of ... Mds. 5,03,436
all of which is stated to have been Table Rice, nearly the produce solely of the District in question.

In 1844-45, the quantity exported to Great Britain was Mds. 6,69,563
and to France ... 10,840

Making a total of ... Mds. 6,80,403
If to this be added the probable consumption of this description of Rice in Calcutta, and what may be supposed to have been exported to the Upper Provinces, a high Estimate will be formed of the produce, in this article alone, of the tract in question.

Supra—page 2.

Your Committee have above referred to Papers transmitted to them by the Government on the 18th of September 1838, regarding the Drainage of the Salt Water Lake, and the questions connected with that important and difficult measure.

Appendix (G)
Nos. I. to XI.

These Papers, although described in that Letter as relative to the Drainage of the Salt Water Lake, embraced the other subjects which your Committee have noticed.

The first object mentioned in the Minute of the Governour General, then Lord Wm. Cavendish Bentinck, is the improvement of the Canal, and reference is made to Lieutenant Schaleh's Memoir above stated; but Lord Wm. Bentinck's Minute has more especial reference to the Canal connecting the Salt Water Lake with the Hooghly, that is, the upper part of Major Schaleh's Canal.

His Lordship describes the upper part of this Canal under the name of the New Circular Canal then executing, of which one extremity opened into the Hooghly, and the other joined the Entally Canal; which latter communicated with the Salt Water Lake, through which there was a Navigable Channel which entered a Creek directly communicating with the Sea, and within the influence of the daily tides.

It will be observed, that this, although a description of the communication of Major Schaleh's Canal with the Sea as it existed in the time of Lord William Bentinck, and still exists, is not a description of the termination of that Canal as designed by Major Schaleh, which was to have been continued to Koolna, the point where it was his intention that it should communicate with the Ganges, and so with the Sea on the one hand, and the Eastern and Upper Provinces on the other. But his Lordship's attention appears to be confined to the upper part of the Canal opening into the Hooghly.

His Lordship recommends a change in the Plan of the upper part of the Canal—and that the New Circular Canal, instead of terminating at the Entally Canal, should be continued round the Lake, and as close to it as possible, and should enter the Creek at deep water below Bhamungutta—that the Lake should be Drained, and subsequently Warped up.

Your Committee, having shown the nature and extent of the whole Canal, which Major Schaleh proposed in the Memoir referred to by Lord Wm. Bentinck, and where the execution of that Plan was permitted to break

off, and what are the advantages sacrificed by its imperfect execution, proceed to consider—First, the question of the improvement of the line of the upper part of the Canal suggested by Lord William—Secondly, the Draining and Warping up of the Salt Water Lake—and Thirdly, the state of Tolley's Nullah, which is remarked on in his Lordship's Minute,, its crowded state, and the great imperfection of its Channel.

In the same Minute reference is generally made to the Drainage of Calcutta; but upon this subject your Committee have fully reported in their first Report. In preparing their present Report they have confined themselves, so far as regards the Drainage of the City, to the ascertaining how far the proposed works for improving the Canal, and for the Draining and Warping of the Lakes will affect that Drainage.

Upon the improvement of the New Line of Canal suggested by His Lordship, your Committee have taken the evidence of Captain Boileau, of the Engineers, Superintendent of Canals, Captain Fitzgerald, Major H. DeBude, and Colonel, then Major, Forbes of the same Corps.

Captain Boileau stated, that the Circular Canal has been executed without any of the evils anticipated by Mr. Blechynden. Mr. Blechynden's anticipations will be found in Appendix to Appendix G. Captain Boileau says he does not anticipate, from the carrying a Canal through dry ground in the direction suggested by Lord Wm. Bentinck, any benefit in any degree commensurate with its expense, though it would facilitate the bringing of all bulky articles of country produce into the populous suburbs of Bayley Gunj, &c.; but that a continuation of the Circular Canal into Tolley's Nullah would answer this purpose much better, and that there is a sufficiently deep cut in the Lake Channel already in existence.

Captain Boileau states the traffick of the two years of which he makes a return, viz. 1839 and 1840, to amount during the winter months, when the Nuddea Rivers are shut, to 38,271 Boats, shewing the traffick during the winter half of the year to be to that of the other half as 14 to 10 nearly; so that the accommodation for Boats which might be sufficient during the rainy season would require to be increased by nearly one-half in the dry weather. The Superintendents are not able to inform your Committee of the respective numbers of Boats entering the Canal which come from one place or another—no note being taken of the sort of produce they are freighted with, or the places they come from. How much, therefore, of the traffick is derived from the Provinces above Rajmahal, and is in some degree dependent upon the shutting of the Nuddea Rivers, and how much from the Eastern Provinces, there are no means of ascertaining. But from the evidence of Mr. Harris noticed above, it should seem that the transport of goods from these Provinces, is greatest in the dry season. The general agricultural produce is not gathered till the commencement of the dry season.

Captain Boileau states, that the present accommodation is not quite sufficient for the great number of these Boats which come to discharge their cargo within these Canals; but that it seems to be sufficient for those which are merely in transit.

It would appear, therefore, to be sufficient for the Boats arriving with goods intended for immediate exportation, and carried direct through the Canal to the River Hooghly, but not sufficient for such as are intended to be warehoused in Calcutta, whether for future shipment, or for consumption, which must form the much greater portion of them.

He states, that the Towing-paths of the Salt Lake Channel scarcely deserve the name, but might be very much improved—that the Towing-

Appendix (J) No. 1 to No. V. pages 1 to 20.

Appendix (J) No. I, pages 1 to 12. App. to App. (G) Paper marked E. 14, page lxxvii.

Ibid. E. 14, lxxv.

Appendix J) No. I. page 2.

Appendix (J) No. XXX. page 123.

Appendix (J) No. I, page 3.

paths of the upper part of the Canal are excellent—and that they have pucca roads (i. e. formed of broken bricks or stones) along their banks for about five miles, which might be advantageously extended throughout their whole length—and he recommends the improvement, or rather the perfecting of the present rude Towing-path along the Lake Channel, by converting it into a Carriage Road for five miles, at a cost of about 8,000 Rs. per mile. The construction of a pucca Road along the South Bank of the Bhamungutta Canal was estimated by Capt. Boileau and submitted to Government.

Appendix (J) No.
I. page 3.

He states, that the construction of this pucca Road along the South Bank of the Balliaghatta Canal, which he recommended, was calculated in his Estimate, on the 1st of August 1839, at Co's. Rs. 8,507 : 13 : 0, but that this expense had not been sanctioned by Government,—that a pucca Road was then in progress along the North Bank of the Balliaghatta Canal at an expense of Co's. Rs. 2,152 : 1 : 0 ; but that to render it as efficient as possible, it should be carried a mile further, so as to reach the Salt Water Lake, the cost of which might not exceed 3,500 Rs. more. Of the pucca Road on the North Bank, Capt. Boileau completed 3,500 feet. The remainder is still unexecuted.

He is not aware that Major Schaleh's Channel in its present state, or after the execution of such improvements as he recommends, would impose any obstacle to the Drainage of the Marsh, or to the Warping it up, though it would add to the expense of them, because some provision must be made for keeping the Lake Channel navigable at all times during either of these processes ; and though the improvement of the Lake Channel by Bunded Roads would bring higher tides from the Soondurbuns to Calcutta, and would lessen the fall towards the Lake level, it would thereby affect the Drainage proposed by Major Forbes (that is of the Town) but in a trifling degree.

Appendix (J) No.
I. pages 1 to 12,
inclusive.

For other improvements as well in these Canals as in Tolley's Nullah, suggested by Captain Boileau, your Committee beg to refer to that very intelligent Officer's evidence.

In the answers given by Captain Boileau to the queries in No. 1, viz. upon the question of the improvement suggested by Lord Wm. Bentinck in the upper part of the Canal, and the other matters above referred to, Captain Fitzgerald states that he generally concurs, as does also Major DeBude.

Ibid.—No. IV.
page 17.
Ibid.—No. V.
page 19.
Ibid.—No. IX.
page 85.

Colonel, then Major, Forbes concurs also in the views taken by Captain Boileau.

Colonel Forbes states himself now to be the only survivor of the Committee consisting originally of Mr. J. Prinsep, Captain John Thomson, and himself, who in 1834, were directed to report on the Lake Drainage.

He states, that Mr. J. Prinsep was fully in possession of the views entertained by his brother the late Captain Thos. Prinsep, of the Engineers, the former Superintendent of the Canals—that Mr. J. Prinsep, who had for sometime officiated in this situation, was likely to be well acquainted with the localities—that Captain Thomson was at the time Superintendent of Canals, and as such, familiar with all the details and affections of the Lake—and that, therefore, at least as far as concerned the parties, the Committee was so constituted as to embrace the best practical information obtainable upon the matters brought under discussion ; neither were the principles of operation, which were unanimously assented to by them, submitted by the Committee, until all the Plans and Papers bearing upon the subject had been studied, and the Canals and Lake carefully examined. To the Re-

port of this well qualified Committee, your Committee will presently advert.

Infra page 51.

He states, that it was then known that the portion of the Canal passing through the Lake stood in need of Towing-paths, which could be most easily and cheaply formed by embankments.

He then goes on chiefly to notice matters connected with the Drainage and Warping of the Lake, with reference to the portion of the Lake he would first warp up as connected with his system of Drainage; but he observes with regard to the Canal, that, whatever else is done towards the ameliorating the condition of the Lake, its Central Channel should, as suggested by the Committee, and as now recommended by Captain Boileau, be embanked; and he adds, that no deepening or widening the Lake Channel, supposing it, as it ought to be, embanked along its southward side, could affect the system of Town Drainage suggested by him: but, in reference to Captain Boileau's answer to the 7th query, he states, that, if the Circular Canal were continued behind Entally and Ballygunj into Tolley's Nullah at Bhowanipoor, such a work would most materially interfere with the system of Town Drainage proposed by him, Colonel Forbes, inasmuch as the extension of the Circular Canal would, if that system were carried into effect, receive the contents of the Town Drains.

Appendix (J)
No. IX. a. pages
92, 93.

Ibid.

Ibid.

If this were otherwise, their Silt added to the alluvion derived from the Hooghly water, would have the effect of warping the land under the Lake up to a level, adapting it for cultivation.

Upon all other matters Colonel Forbes agrees with Captain Boileau.

Your Committee beg to refer to Colonel Forbes' very able Paper above mentioned; but they think it right to say, that, in answer 9 page 94, he refers to a Report forwarded to Government by himself and Colonel, now General, McLeod, of the Engineers, on a line of Canal extending from Mirzapore upon the Hooghly to Rajmahl on the Ganges. To what extent the execution of this Canal would supersede that proposed by Major Schaleh, is a question which has not fallen directly under the consideration of your Committee, nothing connected with that Report having been referred to them.

Appendix (J)
No. 9. a. page 85.

But they have heard that the formation of this Canal has been suspended pending the consideration of the projected Railroad, and they have already shown that neither the Rajmahl Canal, nor the Railroad would supersede the Koolna Canal as a communication with the Upper Provinces for several years; and that, after they did so, the Koolna Canal would remain a work of great commercial importance with reference to the Eastern trade.

Your Committee accordingly next proceeded to put questions to the above mentioned Engineer Officers upon the subject of Draining and Warping up of the Salt Water Lake; but, as in these questions the attention of these gentlemen was drawn to Lord William Bentinck's Minute above referred to, and to the Report of the Committee above mentioned appointed on the subject of Draining the Salt Water Lake, and various Minutes and Papers relative thereto, your Committee think it most in order to state, as shortly as possible, the substance of those several Papers, before stating the result of their subsequent inquiries into this important matter.

Appendix (J)
Nos. I. to V. pages
1 to 20.
No. IX. a. pages
85, to 99.

The Drainage of the Salt Water Lake is considered by Lord William Bentinck so easy a measure, with a fall into the Canal at low-water, that nothing need be said of it.

The Government transmitted to the Court of Directors, along with Lord William's Minute, the following Papers:—

Appendix (G)
No. 11. page 27.

First,—Major Schaleh's Memoir, which has already been adverted to.

Ibid.—Paper
marked A.

Appendix (G)
No. 1. (B) insert-
ed opposite page 6.

Ibid.—No. 1. (c)

Ibid.

Ibid.—No. 1. (D)
page 6.

Ibid.—page 10.

Ibid.—No. 1. (D)
(1) page 11.

Ibid. No. 1. (K)
page 13.

Ibid.—No. 1. (F)
page 17.

Ibid.—No. 1. (G)
page 17.

Ibid.—No. 1. (H)
page 25.

Ibid.—No. 1. (I)
page 26.

Ibid.—No. IV.
pages 28, 29.

Ibid.—No. VI.
(A) page 37.

Second,—Survey of the Salt Water Lake, dated December 1828, by Captain T. Prinsep.

Third,—Survey of the Soondurbuns by ditto.

These two Surveys so transmitted to the Court of Directors, do not appear to have been returned; but copies of them were preserved in the offices here, which have been lithographed and placed in the Appendix.

Fourth,—Queries put by Lord William Bentinck to Captain Prinsep, and his answers thereto, taken into consideration by the Government on the 16th of February 1830. These queries relate to the height of the Tides; the difference of high and low-water mark in the Salt Water Lake and the Hooghly at Chandpaul Ghat, and the relative difference in point of time of high-water; the depth of water in the Canal and Salt Water Lake at low-water; the depth, width, and average silting up of Tolley's Nullah and the silting up of the Canal and Lake; the extent of the Salt Lake, and the question whether the Lake is the property of Government or Individuals; the general level of the Plain, and the lowest level of the Town of Calcutta.

There is much valuable information in this Paper. As to the size, and in whom the property is of the Lakes, Captain Prinsep states, that the Western Lake, the largest, contains about 18 square miles, equal to nearly 12,000 acres of land; that the Eastern Lake may be taken at about 5,000; that the right to the property is, he believes, without question in the Government, but that at present certain Zemindars claim and enjoy the rights of fishing on the Lake, and think themselves at liberty to make encroachment upon its extent. To this Paper is annexed a Note headed "Levels showing the relative height of the Tides in July, August, and September," as compared with the lowest part of Calcutta; and a Table of Land Levels of different parts of Calcutta; the rice Plains north of the Lake; the flows of the Drains along the Circular Road, and of the believed lowest bed of the Salt Lake, compared with the Tide Level at the different times of year there indicated.

Fifth,—A Table exhibiting a daily Register in the River Hooghly from 1805 to 1828, by Jas. Kyd, Esq., which, with the observations it contains, forms likewise a very valuable Paper.

Sixth,—Capt. Prinsep's Memorandum and diagram on Tolley's Nullah.

Seventh,—Captain Prinsep's Memorandum on the Salt Water Lakes, with suggestions for filling them up by Warping, to which was attached a Scheme for raising the bed of the Lake to a level fit for cultivation, with a statement of expense, and a Table of Land and Tide levels.

Eighth,—Captain Prinsep's Memoranda, in reply to His Lordship's questions of the 29th and 30th of December 1829.

Ninth,—A Letter from W. Dampier, Esq. to the Secretary to Government, stating the rents paid to the Zemindars for land bordering upon the Lake, and the produce in the shape of rent which would accrue to the Landholders should the Lake be drained.

The Despatch of the Court of Directors of the 10th of November 1830, and relative Papers were sent to the Military Board on the 2nd of December 1833, with a Letter from the Private Secretary of the Governour General, requesting that the Board would take the subject of them into consideration.

The Military Board on the 27th September 1833, requested Captain Forbes, Captain Thomson and Mr. Prinsep, to whom they transmitted the Papers on the subject of Draining the Salt Water Lake, to form themselves into a Committee, and report their opinion upon the following points:—

First,—As to the expediency of undertaking the work with reference to its probable influence on the health of Calcutta, and to the return which might be expected for its outlay.

Second,—On the best mode of executing the work.

Third,—On the expense and length of time that would be required for its completion.

Lastly,—The effect it would have on the Drainage of Calcutta, proposing such means for obviating any difficulties in this respect as might occur to their Committee.

This Committee is that mentioned by Col. Forbes. On the 11th of January 1834, in a Letter to the Military Board, they submitted under several heads the conclusions, which the investigation of the subject they had it in their power to make appeared to authorise.

As to the expediency of undertaking the Work with reference to its probable influence on the health of Calcutta, they state that, fortified by the opinions of medical men, they had reason to believe that the entirely embanking out the salt and brackish water, and effectually draining off rain and alluvion-charged river water from a surface, which they state to be of the extent of 40 square miles, a great part of which is now daily overflowed and receded from by the Tide, lying to the south-eastward, and for nine months of the year to the windward of Calcutta, will most materially improve its salubrity, and that of the country adjacent.

Your Committee agree with this Committee in opinion, that this would be the ultimate effect of this operation. But they think it requires great consideration whether the immediate effect upon the salubrity of the City and country adjacent might not be extremely deleterious, and whether it would not be essential to provide some adequate means of preventing this result before commencing the work, if undertaken. To this matter your Committee will hereafter address itself.

The embankments adapted for effecting this object are represented in a Sketch, which accompanied this Report, forming a Plan of the Salt Water Lake near Calcutta, a Lithographed copy of which is inserted in the Appendix opposite the said Letter.

With regard to the return, which might be expected when the Lake was drained, the Committee annexed Statements of the Executive Officer, which inclined them to believe that the attainment of the important objects contemplated might be effected with a return of 10 per cent. upon the outlay. They report what they consider the best mode of executing the Work—that the probable expense, exclusive of a feeder separately estimated for, would be Sicca Rupees 2,00,000—that, in five years from the time that the entire Work should be sanctioned, the embankments, the construction of a new Feeder, of Drains, Dams, and Sluices might be completed, allowing the first three years for procuring the necessary information, the purchasing of Land, and the collecting of materials—and they conclude by reporting, that the Drainage of that part of Calcutta lying to the northward of the Dhurruntollah would not in any way be affected by the Works proposed, and the Drainage of the ground to the southward of that street might be much improved by them, as they would afford it an increased fall of from 2 to 3 feet. It will be recollected that the amount of ground which would be obtained is stated at 36,000 beegas.

The Military Board also obtained from Captain J. Thomson, Superintendent of Canals, a description of the ground lying south-east of Calcutta, dated 11th January 1834, which states the various Levels and Tides.

Appendix (G) No.
VI. (u) page 38.

Infra page 57 and
65.

Ibid.—page 38.

Ibid.—No. VI. (u)
page 39.

Attached to this Paper is a Paper entitled, "Rough Estimate of the probable expense of Draining the Salt Water Lakes," agreeably to the Plan recommended in the foregoing Report. This rough Estimate contains, along with sections of the several Works, a description of the Embankments proposed, and of the ground, with Estimates of the expense.

Appendix (G)
N VI. (c)
page 11.

I.—No. VI. (c)
44
I.—No. VI. (v)
page 48.
Ibid.—No. VI. (k)
page 50.
Ibid.—No. VI. (r)
page 51.

Minutes were drawn up by the Members of the Military Board upon the Report of the above mentioned Committee; one by Lieutenant Colonel Galloway, one by Colonel Sir Thomas Anbury, the Chief Engineer, one by Lieutenant Colonel Craigie, and one by D. McFarlan, Esq., Chief Magistrate.

Lieutenant Colonel Galloway in his Minute states, that the Scheme presented by the Committee is chiefly confined, save the feeder, to the process of Draining the Lake, and not of Warping; but he apprehends that the Warping will be indispensable, both in regard to the advantage proposed as to increased salubrity of climate, and for the purpose of cultivation, for which he assigns his reasons at some length, affirming that, if the Warping succeeded, there would be no necessity whatever for Draining, for as the bottom became elevated, the water would naturally recede; and in order to do this he apprehended all that was necessary was to cut a feeder as projected from the Hooghly near Cossipore, for the purpose of admitting water, and simultaneously forming Warping Bunds, but he would by no means recommend that the Warping of the whole Lake be attempted at once. He then proceeds to the detail of the Plan he proposes.

He states, that he entirely concurs in the view taken by the Governour General (Lord William Bentinck) in regard to the Circular New Canal, which, passing towards the Soondurbuns, should never have entered the Lake. He refers to his having long ago stated his objections to this part of that Scheme. These objections are stated in his Minute of the 18th January 1831, which will be found in the Appendix; and he goes at some length, into the detail of the many advantages which he thinks would result from carrying the Circular Canal through firm ground along the Southern range of the Lake, and of his reasons for being of that opinion.

Ibid.—page 46.

Upon this question your Committee have already stated the opinions of other Engineer Officers differing from that of Colonel Galloway.

Ibid.—No. VI. (v)
page 48.

The Minute of Sir Thomas Anbury commences by expressing his regret that, considering the high authorities under which the Report had been framed, he derived no light therefrom—that upon the question of salubrity he did not feel himself competent to enter—but that the measure, independent of the healthiness of Calcutta, was one much to be encouraged—and after several other observations he concludes by saying, that on the whole he thought that the cost of the undertaking had been heedlessly estimated for, and that in fact the Plan, if it could be called one, was altogether undigested, and not at all explained.

Ibid.—No. VI. (k)
page 50.

Lieutenant Colonel Craigie contents himself in his Minute with stating, that the Report of the Committee was marked by simplicity of plan and brevity of exposition—that it was the joint Report of Engineers of high scientific attainments, and with intimate knowledge of the Lake, the result of long consideration, and personal observation—that Captain Thomson was likely to be employed in the execution of the work, should it be sanctioned, and therefore willing to be responsible for the success of the Plan—that a Report framed under such circumstances must be entitled to great weight—that of its intrinsic character he would not venture to speak—he would however suggest that it should be published, and the Plan thus thrown open to public discussion.

Mr. McFarlan, Chief Magistrate, gives no opinion upon the Report; but, considering the main object of the Drainage and Warping up the Salt Water Lake to be to improve the salubrity of the capital, he looks upon it as absolutely necessary that the scheme, and manner of its proposed execution, should be thoroughly unfolded to the inhabitants, and suggests the possibility that increased sources of Malaria may arise whilst the work is in progress, and that an extended rice marsh, into which the Lake would in time be converted, might not be less productive of noxious vapour than the surface of a Salt Lake. He suggests, that, if the estimate of profits be just, some Capitalists would soon undertake the job, with a far better chance of economical management, and he would propose that, failing private Capitalists, a joint-stock Scheme be propounded for general consideration.

Appendix (G) No. VI. (F) page 51.

An account of all these proceedings, together with the Papers mentioned, was transmitted to the Court of Directors on the 23rd of December 1835, in which Despatch the Government acquaint the Court that—

Ibid.—No VII. page 52.

“The Despatch of their Honorable Court, dated the 10th November 1830, on the subject of Draining the Salt Water Lake in the vicinity of Calcutta, and improving the course of the Circular Canal, having reached the Presidency during the absence of the Right Honourable the late Governor General at Simla, the subject was referred for His Lordship’s consideration; and the consideration thereof was by him suspended until his return to Calcutta, when the whole papers connected with it were transferred through His Lordship’s Private Secretary to the Military Board.”

“These Papers were all brought upon record on the 5th March last, but no orders were passed upon them by the Right Honourable the late Governor General in Council, and the subject has not since been resumed by us.”

Ibid.—No. VIII. page 53.

No answer having been received by the Government of India to this Despatch up to May 1837, the Secretary to the Government of Bengal on the 9th of that month informed the Military Board, that, no reply having yet been received to that Despatch, His Lordship deemed it unnecessary to revive the subject at present.

On the 2nd of May 1838, however, the Court of Directors addressed a Despatch to the Government of India, in which they state the substance of the Papers transmitted to them on the 23rd December 1835, and say that the Government already are in possession of their sentiments on the general subjects of those paragraphs, and that the Court does not see occasion from the perusal of the documents now transmitted, which are unaccompanied with the expression of any opinion on the part of the Government, to add to their instructions contained in their Despatch of the 10th of November 1830—that the Government it would appear had not taken any proceeding in the matter—that they thought the greatest degree of publicity should be given to the information they had obtained—and were inclined to the opinion expressed by Mr. McFarlan that, if it could be made apparent that the undertaking would produce a return of 10 per cent. on the outlay, there would be no want of Capitalists to secure the completion of the work without the interference of the Government.

Ibid.—No IX. page 54.

The matter was then referred to your Committee.

Your Committee, as above stated put Queries to the Engineer Officers, who have been already mentioned, regarding the Draining and Bunding up of the Salt Water Lakes.

Captain Boileau in his answers stated, that he did not see any reason to doubt the practicability of Draining the Salt Water Lakes, though he did not think the execution of it advisable; that an opening between these

Ibid.—Nos X and XI. pages 55 and 56.
Appendix (J) No. I. to No. V. pages 1 to 20 No. IX. a, and No. X pages 85 to 99.

Lakes and the River Hooghly would hardly answer the purpose of Draining them, from the respective Levels of the tides in the River and the Lakes ; but that the Lake Drainage could be effected by the Soondurbun outlets ; that, being altogether opposed to the Drainage of the Lakes, he would not recommend the attempt to be made either way, but, if undertaken at all, he thought it could best be done in the direction of Tardah Nullah, the general surface slope of the Lake ; that the framing an Estimate would occupy more time than he could spare for it.

Capt. Boileau's attention was requested to para. 10 of Lord Wm. Bentinck's Minute above referred to—para. 6 of Col. Galloway's Minute—and to the Letter of the Military Board to the Right Honourable Lord Auckland of date the 29th of August 1837 ; and he was asked whether, if a Canal were cut in the direction proposed by Lord Wm. Bentinck and with the sides so raised, he was of opinion that the necessity of Lock Gates at the mouth of the Circular Canal, where it takes its departure from the Hooghly, would be superseded, and he answered that he did not think that the Lock Gates could be safely dispensed with, and he gives his reasons for that opinion.

His attention was then requested to paras. 8, 10, and 14, of Lord Wm. Bentinck's Minute—to Captain Prinsep's Memoranda and Schedule there-to annexed—to Sir Thos. Anbury's Minute—to the answers returned to the Military Board by that Committee—to Captain Thomson's description of the ground lying south-eastward of Calcutta, and the Plans there referred to—and to the Plan showing the means proposed by Lieutenant-Colonel Galloway and the Committee for Draining the Salt Water Lake ; and he was asked, whether he was of opinion that the Warping up of the Salt Water Lake was practicable, so as to render the large surface of these Lakes dry for the purposes of cultivation, and free from the generation of Marsh Miasmata ; and, if he was of this opinion, whether he thought the so doing would in any respect endanger the Drainage of Calcutta, or in any respect which might not be obviated ; and he answered as follows—

“ I am of opinion that the Warping of the Salt Lakes is practicable, “ so as to bring their entire surface under cultivation, which measure would “ I think be highly beneficial in many ways, and I would strongly advo- “ cate the adoption of this measure in preference to making any attempt “ at Draining them.

“ Though temporary inconveniences might be sustained, during the “ progress of such a work, by the drying of the mud deposited in the present “ site of the Lake in the course of the season, yet I do not think that the “ neighbourhood would even at these times be at all more unhealthy than “ it is at present ; the atmosphere in the immediate vicinity of the Lakes “ being now very pestilential, and several of my people have died from “ its effects.

“ After the work of Warping shall be completed, and the surface of the “ Lakes raised two feet above their present level, and brought under culti- “ vation, I do not suppose that their neighbourhood would then be nearly “ so unhealthy as it is at present.

“ A large area, which is now nearly worthless as well as noxious, would “ be brought under cultivation, and become most valuable arable land at “ a cost far below the return that might be expected, should this great “ work be carried into execution.” He adds, that “ it would not in his opinion “ in any way interfere with the Drainage of the City, beyond the trifling “ difference of level which he had before adverted to, viz. raising the waters “ about 1½ feet in the further extremity of the Canal at Chitpore, which he “ says needs scarce to be taken into consideration.”

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He agrees with Capt. Prinsep in his proposal to commence the process of Warping upon that portion of the Salt Lake nearest to Dum Dum, and of course concurs with Sir Thomas Anbury so far as his Plans coincide with Capt. Prinsep's; but he does not think the Lakes ought to be drained previous to their being silted up, as appeared to be recommended by the Chief Engineer.

He was of opinion, in opposition to Sir Thomas Anbury, that it would be scarcely practicable to use the Circular Canal in any way as a Feeder of muddy water to the Lake, without doing serious injury to the Canal Banks, and materially obstructing the Navigation, by which great inconvenience would be occasioned to the Publick, and material loss of revenue to the Government, besides the increased expense of keeping the Canal in repair. He then states where a separate Cut should in his opinion be made for a Feeder to convey the River water to the Lake, and its course, and dimensions, referring to Captain Prinsep's proposal with which he very much agrees; except that, although the dimensions of the new Feeder, showing a section of 200 feet, recommended by Capt. Prinsep, seems to be quite enough for the supply of muddy water, he says it might be increased with much advantage, should it be determined ultimately to convert it into a navigable Canal; and he says that Capt. Prinsep's Estimate will give a very good idea of the expense attending the execution of such a Feeder as he proposed, and the enlarged one recommended by himself would probably cost rather more than double his Estimate, or in round numbers three Lacs of Rupees.

He concurs with the Committee appointed by the Military Board in thinking, that the Drainage of the Northern part of the City would not be injuriously affected by the construction of the proposed works, and that the Drainage of the Southern Suburbs would be improved by them; but that the improvement of the Drainage of the latter would be effected in a far higher degree by the excavation of a Canal between Tolley's Nullah and Entally Canal as lately recommended by him; and he thinks that the Drainage might be perfected without following the Plan recommended by Major Forbes, which provides for giving double the present fall for the Drains, whereas he, Capt. Boileau, considered that there was quite fall enough at present if the slopes of the Drains were properly managed.

Your Committee are humbly of opinion, that it would be unwise to depart from Colonel Forbes' system of Drainage, unless or until a more perfect system shall be suggested, and they cannot think it advisable to sacrifice any fall that can be obtained; they would, therefore, humbly recommend, as at present advised, the carrying of Colonel Forbes' Plan into effect, and surrendering the advantages of the Canal between Tolley's Nullah and the Entally Canal, although quite alive to those advantages.

Captain Boileau's attention was particularly directed to the observations of the Court of Directors, under date the 18th January 1837, upon the inconvenience from the accumulation of Silt deposited in the Canal by the Calcutta Drains.

Upon this he gives a very distinct explanation, and concludes by stating, that your Committee may, he thinks, fearlessly adopt any system of Drainage which may appear best to them for removing the scourings of the City, without anxiety as to where the mud may ultimately be deposited, the Canal Department being quite competent to get rid of all the Silt, where it may be discharged from Drains and Sewers properly constructed.

In regard to health Captain Boileau states, that he never had any complaints made to him of the insalubrity of the Entally Canal, nor did he ob-

serve that the people who inhabit its Banks are less healthy than those in other parts of Calcutta; but that Mr. Blaquiere, who had had the experience of very many years, had given evidence of an opposite nature, which ought to have more weight than his.

With regard to the health of the Inhabitants of the borders, or of any inhabitable part of the interior of the Salt Water Lake, he says there have been great sickness and mortality, both in his Toll Collecting Establishment on the Western margin of the Lakes, and also among the people employed by him in driving piles along the south bank of the Balliaghatta Canal; that the mortality, among the former he attributed entirely to local causes, as his people appeared to have sunk under endemick disease arising from Marsh Miasma; but the deaths on the Balliaghatta Canal he believes to have been caused by Cholera Morbus, or some epidemick disease, and not from local insalubrity; he repeats that he does not think it would be advisable on any account to attempt the Drainage of the Salt Lakes previous to their being Warped up, and he greatly fears injurious results from undertaking any such operation, by which so large a surface of pestilential soil and miasmatic matter would be exposed, to the great detriment of every person living in its neighbourhood, or to leeward of it.

Your Committee beg to refer your Honour to the evidence itself for the particulars of Captain Boileau's most intelligent and valuable statements; they will advert more shortly to the other witnesses examined, referring for particulars to the Appendix.

That the Lock Gates at the mouth of the Circular Canal could not be safely dispensed with Captain Fitzgerald agrees with Captain Boileau, as also upon the practicability of Warping up the Salt Water Lakes, so as to render their surface fit for the purposes of cultivation. He is of opinion, that the Draining and Warping of the Lake would improve the healthiness of the neighbourhood, and not interfere in any way with the Drainage of the City; upon the impracticability of using the Circular Canal by way of Feeder of muddy water to the Lake, and the propriety of the separate Cut recommended by Captain Boileau, Captain Fitzgerald agrees with that Officer. He also thinks that Sluices should be constructed in the embankment for the discharge of rain and other water admitted into the Lakes. Upon the other questions he agrees with Captain Boileau, except that he is not able to speak as to the unhealthiness of the neighbourhood of the Lakes from any knowledge of his own; and that he is of opinion, that it would be advisable to drain the Lakes even if they are not warped; and he thinks the so doing would improve the healthiness of that part of the country, and that, if the Warping system is practised, the portion of the Lake under operation ought, it appeared to him, to be drained. If any water were allowed to remain, so much the less would be let in, and a proportionate less quantity of alluvion deposited, and the time which the operation would otherwise take would consequently be prolonged.

Major DeBude believes it to be both practicable and desirable to drain the Salt Water Lake, not into the Hooghly but in the direction of Tardah Nullah.

He concurs about the Lock Gates, and the Warping, but thinks it desirable to drain the Lakes also, and looks upon the Drainage as more immediate and certain in its effect than Warping, but would recommend the trial of both, and does not anticipate any injurious effects to the Drainage of the City from either operation, except that he adheres strongly to the Drainage—he thinks the process of Warping would be very slow, but would

Appendix (J)
page 5.

Ibid.—No. IV.
page 17.

Ibid.—No. V.
page 19.

ultimately be effectual; but, if obliged to limit himself to one process, he would prefer the Drainage as more immediate and certain, and he does not suppose that the effect of laying the surface of the Lakes permanently dry would be at any time so bad, as that of the alternate exposure and inundation which now occur.

Colonel Forbes, in answer to the 2nd Series of questions relative to the Draining and Warping of the Lakes, states decidedly, that Draining the lowest levels of the Salt Water Lake, apart from Warping them up, would only be possible by steam-engine power—He says that, having spoken to Capt. Boileau respecting that part of his reply to the 1st Query, respecting the practicability of completely Draining these Marshes, in which he states that he does not see any reason to doubt the practicability of Draining them—he finds that Captain Boileau means that he does not think that it would be advisable to attempt Draining the Lakes, in contradistinction to Warping them up,—an opinion in which Major Forbes concurs.

Appendix (J)
No. IX. b page 97.

Your Committee would direct your Honour's attention particularly to what appears to them the admirable proposition of Major Forbes, to bring in aid of the proposed Feeder from the Hooghly all the natural Channels between Chitpore and Ishapore, for the purpose of conveying to the Lakes masses of earth and alluvion for Warping them up, with the guards necessary to be attended to in the progress of the process, and its probable expense.

Ibid.

He concurs in opinion, that nothing proposed for this Warping up would be injurious to the system of Town Drainage recommended in his former evidence.

In regard to Lord William Bentinck's Minute referred to in Query 3rd, he says, that, having attended Meetings of a Committee at Government House on the subject of the Canal proposed by Lord W. Bentinck, he no more approved of it then than he did at present—that he conceived its construction utterly at variance with the proper Drainage of Calcutta, and that, previous to sanctioning the present Lake Channel, and works connected with existing Canals, Lord William himself must have arrived at a conclusion somewhat similar; and that no Engineer in this country approved of the Plan, though he could not imagine that there could have been any other than a predisposition to approve of it if possible. He believes that the Warping of these Lakes would not be difficult, and would in every way be advisable.

Your Committee beg to refer further to this very important Paper in the Appendix, particularly to Answer 13, describing the Lakes in their present state, the Embankments and Towing-paths required, and their fearful insalubrity.

Ibid.—No. IX. b
page 97.

There are two considerations of great importance in the Draining or Warping up these Lakes, to which your Committee think it necessary to direct your Honour's attention upon the question,—the one having reference to the insalubrity of these Marshes as more immediately affecting their near neighbourhood, and without doubt extending in a greater or less degree to the surrounding country—the other bearing upon the question of increased danger of Malaria during the process of Draining them.

Mr. A. Dyson, Overseer of the Entally Suburbs, which appointment he had held for 24 years, was examined, and he stated that he thought the Entally Suburbs more healthy than Calcutta—It is within 2 miles or 2½ miles of the Lake.—Mr. Dyson states, that his residence is two miles from the Lake—that he himself had never been sick but once, and that was on the occasion of his being attacked with the Jungle fever whilst superintending the

Ibid.—No. III.
page 13

repairs of a Road close to the Salt Water Lake. He states, that Cholera, Dysentery, and other Bowel Complaints are the most frequent diseases of Entally, and that he had the misfortune to lose in 1825-26 three children from spleen, one 13 years and 10 months, and one 10 years and 9 months, and another 8 years and 6 months—that this was at Entally.

This evidence is not calculated to convey a favourable impression of the healthiness of that Suburb; but it does not show that it is less healthy than the Native Town of Calcutta, where these diseases appear, from the former Report of your Committee, to be frequent and severe.

Mr. Dyson mentions causes of unhealthiness, which may have operated quite independently of the vicinity of the Salt Water Lakes.

He says, that there are many Drains in Entally, which are not cleaned out—that he has not the men to clean them—that he had formerly one Division under his charge, and had then 250 convicts, and could keep the Drains quite clean—that this was in Mr. Elliot's, and subsequently in Mr. Barwell's time—and that he had at the present time only 70 convicts, and had now two Divisions under his charge—that he had observed a great difference in the healthiness of the Inhabitants since the Drains had not been kept clean—that formerly in Mr. Elliot's time there was not so much sickness—that all the gardens are at the present time overgrown with Jungle, and the Roads overhung with trees which obstruct ventilation.

He concurs with the evidence appended to your Committee's First Report, as to the comparative healthiness, speaking of Entally, of the different seasons.

He states November, December, January, and February, as the most healthy—in March, April and May it becomes less healthy—in May and June he had had several cases—he finds the convicts become ill in July—he keeps them in the Guard two or three days, after which he sends them to the Hospital—he has in July eight or nine convicts ill—this continues much the same in August and September—in October not so ill.

He does not know any thing of the state of health of those who live near the Salt Water Lake—his duties do not frequently send him to that vicinity. He says, that Entally is supplied with drinking water chiefly from tanks—that they have only one publick tank, the water of which was then undrinkable from the quantity of putrid vegetable matter accumulated in it—that there are several private tanks the water of which is wholesome, and that all the people take water from the private tanks, except in the hot season, when the owners, from a fear of their tanks becoming dry, prohibit water being taken from them by the poor Native Inhabitants, which puts them to great inconvenience and distress; and he says generally that this Suburb is very scantily supplied with good water for drinking and culinary purposes—that he has witnessed material suffering from a want of good water for his own convicts—that he has been obliged to send them to private tanks with the owners' permission—that there is no supply of proper water for the publick—that his convicts have a tank of their own, but the water is not drinkable—that they have wells, but the wells are not good. And speaking of the Suburbs generally, he says, that the tanks, with few exceptions, are full of grubs and insects.

He says of the Drains in Entally, that the Drains run off pretty free when kept clean—that he could keep them clean if he had a sufficient Establishment—that formerly in Mr. Elliot's and Mr. Barwell's time they were kept quite clean—that he used to take the Levels himself, and, when in controul of a larger Establishment, the Drains were kept so clear, that the water ran pleasantly through them—that there is a sufficient fall towards

the Lake to keep the whole of the Suburb of Entally well drained, except sometimes when there is a heavy fall of rain for seven or eight days; then the Drains are all full, and sometimes the Salt Water Lake during spring tides chokes all the Drains.—He has seen all the Low Lands about the Lake covered with water, and all the villages about there surrounded with water.

A more miserable picture of the state of a Suburb of the Capital of a great Empire, held by a civilised Government, cannot well be imagined, though unhappily it is only the same with the state of the other Suburbs of Calcutta; but it does not appear that the amount of disease in this Suburb, whatever that may be, is more attributable to the neighbourhood of the Salt Water Lake, than to the want of Drainage, foul Tanks, Jungle, obstructions to Ventilation, and want of wholesome Water, which would alone account for the utmost state of insalubrity.

This Suburb, as has been already said, is about two miles from the Lake.

The Native Town of Calcutta is about three miles.

The answers returned by W. C. Blaquiere, Esq., Magistrate of the Calcutta Police, who has resided for a long time at Sealdah, a Suburb adjoining Entally, state, that in the opinion of the witness Calcutta is healthier than the Suburbs of Sealdah and Entally, an opinion founded on the general observation he had made of the comparative degree of sickness prevalent in the Town and Suburbs, and the degree of its malignity—He considers the neighbourhood of the Salt Water Lake exceedingly unwholesome.

During the administration of the Marquis of Wellesley he had occasion to establish a Police Chowkee (station) in the vicinity of the Lake, to prevent the escape of French prisoners of war by that route, and deputed a party of fine healthy Up-country Brijabassees, the greatest part of whom, to his astonishment in the course of a few days, were prostrated with severe Bilious Fevers, which rendered it necessary to relieve them by sending another set, who were equally unable to withstand the pernicious effects of the Malaria of the Lake, and were withdrawn after the loss of two of their number, who fell victims to its pestilential influence, which deterred him from sending any more there. He states, that he had observed a very material change in the salubrity of Sealdah since the excavation of the Entally Canal, previous to which sickness was very rare in the neighbourhood; whereas, since the existence of the Canal, Fevers, particularly those of a bilious type, have been highly prevalent, which he attributes in a great measure to the existence of the Canal, and its stagnant and filthy state—that the Inhabitants were of opinion, that its bad effects were less felt since the excavation of the Baug Bazar Canal, which had in some measure diminished the evils above stated, causing an influx and reflux of water into and out of the Entally Canal, which was scarcely perceptible before.

By this evidence it is sufficiently established, that the immediate neighbourhood of the Salt Water Lake labours under the full effect of pestilential vapour commonly infecting the borders of such places; but it would not appear that this effect was, in the judgment of this very intelligent gentleman, who has had so much experience of the varying state of their salubrity, to extend to Sealdah and Entally, at least to such degree as to attract his attention.

Mr. Pemble Strong concurs with Mr. Blaquiere in thinking Calcutta more healthy than Entally; but he distinctly refers in part to its being further removed from the vicinity of the Lake, and in part to its being kept in an infinitely clearer and cleaner condition than Entally; and he gives as an example of what may be done by cleaning, draining, &c. “Cornwallis

Appendix (J)
No. VI. page 21.

Ibid.—No. VII.
page 24.

Square, now remarkably clean and healthy,—a place described by the late Bishop Heber as having been dreadfully unhealthy.”

He states, that the Inhabitants of these Suburbs are subject to particular classes of disease. Fevers, Dysentery, and Spleen are among the most common diseases. These are diseases peculiarly caused by Malaria, and the observation of Mr. Blaquiere, that the hot season is the healthiest season of the year, seems at variance with the result of the observations, and commonly received opinions of the scientific Medical men in different parts of the world on the subject of Malaria, which Dr. Martin has collected in his valuable Note on the Draining of the Salt Water Lake, from which it appears that their opinion is, that the diseases produced by Malaria generally accompany the hot weather.

Your Committee adhere to the opinion expressed in their former Report, that there is no ground for thinking that the medical care required in March, April, May, and June is materially less than in the cold season, or that the diseases produced by Marsh Miasmata do not prevail during the whole year in Calcutta, and its Suburbs.

Mr. Strong, a Member of your Committee, to whose medical care the Suburbs are intrusted, and who, in the opinion of the other Members of your Committee, has paid great and most praiseworthy attention to the health of their Inhabitants, the nature of their diseases, and the natural circumstances which produce so great an amount of disease and mortality, states, that the villagers on the border of the Lake are great sufferers from Fevers, continued and intermittent, Dysentery, Spleen disease, Dropsy, and disease of the Alimentary Glands, and that their appearance generally is squalid and unhealthy. The depth of the Lake, he says, may be said to be about knee-deep, or from one foot to one foot and a half deep.—He believes at every reflux of the tide a very great portion of the Lake is left exposed to the sun by day, and the action of heat and damp at night.—He is of opinion, that, in this climate, where the sun is all powerful, the Malaria formed under the circumstances of Draining and Warping the Salt Water Lakes would be rapidly dissipated by its prevailing heat—that the illness produced by Drainage near *Chartreuse* in France is, he humbly submits, no guide to us in this climate; for we find, in more moderate climates than this, that the Marshes made for Rice cultivation are much more injurious than Rice Marshes here.—He is however of opinion, that Warping the Lake would be most advisable. Along with his answers to the queries put to him, Mr. Strong favoured your Committee with several Papers upon matters connected with the Drainage of the Lake, and the unhealthy state of the Suburbs generally, which he had drawn with great care at considerable length, and with a most praiseworthy zeal in these interesting matters so intimately connected with the salubrity of the extensive District under his medical charge.

To these, printed in their Appendix, your Committee beg leave to refer, and particularly to the valuable Abstracts and Statements regarding the Mortality in Calcutta, extending over a period of 20 years and upwards.

So far back as August 1828, Mr. Strong made a forcible representation to the Circuit Judge, appended to his half yearly Report upon the Insane Hospital, upon the state, not only of the ground contiguous to the Hospital Premises, but upon the Suburbs in their neighbourhood. He states, that, having for upwards of twenty years applied his attention to atmospherical disease, and having now for several years been Surgeon of the Suburbs of Calcutta, he considers much of the unhealthiness of the Suburbs as well

Appendix (J)
page 25.

Ibid - page 27

Ibid.—No. VII.
No. VII. a. to No.
VII. g.

Ibid.—No. VII. a.
page 69.

Appendix (I) No.
51. c. (1) page 85.

as of Calcutta, attributable to the state of the Lands in the Suburbs, more particularly in the Soora, Entally, and Ballygunj parts of them.

These parts are on a line with each other about equally distant from the edge of the Salt Water Lake. But Mr. Strong does not mention the vicinity of the Marsh as among the circumstances which contribute to their unhealthiness, though without doubt that vicinity must, as above stated by him, contribute greatly to this effect. Parts of these Suburbs, as above stated, are at some distance from the Lake. But he particularly refers to the Lands bordering upon the Marsh as being more covered with Jungle than other parts, and says that in almost every part of them numerous irregular excavations are made for brick-making, and similar purposes, in which impure air is generated by the decay and putrefaction of vegetable matter in water, known to be capable of causing Fever and Dysentery, modifications of which Malaria may also be the cause of Cholera; which disease predominates in those climates and soils in which Fever and Dysentery abound. And he refers to instances of Cholera being so produced, and to Dr. McCulloch's work on Malaria, and he adds that he could name at that moment several families about Entally who were laid up with Fever by the impure air generated in their neighbourhood by the decomposition, or decaying of vegetable substances, and several other families there who were removing up to Chinsurah and other places; their removal being more conducive to their recovery than any medicine they could take, while they continued to breathe this atmospherick poison.

An extract of this Letter was transmitted to the Nizamut Adawlut and to the Magistrate of the Suburbs of Calcutta, and a copy of it to the Magistrate of the 24-Pergunnahs, and to the Secretary to the Government, for the information of the Governour General.

On the 25th of September 1828, Mr. Shakespear, Secretary to Government, wrote to the Magistrate of the Suburbs Mr. Master, by direction of the Governour General, to desire with reference to Dr. Strong's remarks his sentiments upon the practicability of abating the nuisances complained of by that gentleman, and of remedying generally the unhealthiness of the Environs of Calcutta. To this Letter Mr. Master on the 31st of October 1828, returns a long and elaborate answer, in which he states very fully the circumstances in the condition of the Suburbs, which in his opinion constitute the chief causes of the unhealthiness which prevails in them.

This, in the opinion of Your Committee, is an able paper, and besides the above description, contains many suggestions, which if carried into effect would undoubtedly have greatly improved the salubrity of these Suburbs—This correspondence is printed in the Appendix.

He says, that the Magistrate of the Suburbs would find little difficulty in promoting more effectual Drainage, were he supplied with an ample number of convicts, or put in possession of funds, which would enable him to command the services of hired labourers. He states the want of pure wholesome water to be a privation severely felt by the lower classes, and that the excavation of a few publick Tanks, would materially contribute to the health, comfort, and cleanliness of the Inhabitants; and he suggests the formation of certain broad Roads towards the Lake as anxiously desired by the Inhabitants, and considered by himself as particularly essential.

In reply to this communication the Secretary to Government informs Mr. Master, that the Governour General in Council, regrets that the necessity of strict economy prevented his authorising considerable immediate outlay from the Publick Treasury in furtherance of the very important object of improving the salubrity of the Environs of the City, and that it

Appendix (1) No. 51. a, No. 51. b, No. 51. c.

Ibid.—No. 51. d, page 86.

Ibid.—No. 51 e, pages 86 to 90.

Ibid.

Ibid.—No. 51. f, page 90

only remained therefore to consider how far it might be practicable to supply the Allipore Jail with convicts from the Jails in Bengal.

Appendix (I) No. 51. *a.* page 91.

Upon reference to the Nizamut Adawlut, and by them to the Magistrates in the Mofussil, it appeared that no sufficient number of convicts could be spared for the purpose, and there the matter has been permitted to rest ever since.

Appendix (B) page 4.

Appendix (J) pages 21 to 30.

Appendix (I) pages 80 to 92.

The extreme insalubrity of the Suburbs has long since been universally acknowledged, as appears from representations both from Medical men and Magistrates, which will be found in the Appendix.—But it does not appear that the insalubrity of the Suburbs is attributed by them in an especial manner to the vicinity of the Marsh; in which this evidence concurs with that to which your Honour's attention has been above directed; although it is certain that the Malaria from the Marsh must contribute largely to that insalubrity.

Appendix (D) &c. and Mr. Martin's Topography of Calcutta.

Your Committee think it very probable, that, in a locality at a certain distance from a Marsh, in which locality the means of generating Miasma prevail in abundance at a much shorter distance, obviously quite sufficient to produce their necessary effects, those of the distant Marsh may escape observation, though sufficient of themselves to render the site in a high degree unhealthy, even were the other causes of Malaria removed.

Ibid.—No. VIII page 73.

Answers were also received from Samuel Smith, Esq., Chairman of the Entally Conservancy Committee to the same Queries submitted to Mr. Blaquiere. This Gentleman considers Entally healthier than the densely occupied parts of Calcutta, and says that he always feels himself in better spirits in his garden in Entally than at his Town house in Tank Square. Upon other matters regarding the neglect of the cleansing the Suburbs, and the lamentable deficiency of good water, he concurs with the other witnesses. The subject, he says, has been brought to the notice of Government in the strongest terms by the Entally Conservancy Committee but without effect: but in regard to the Burying Grounds, he states that the Mahomedan Burying Grounds are not taken care of, and are at times very offensive.

Ibid.—No. VIII. page 74.

Ibid.—No. VIII. *b.* page 75.

The evidence of Mr. Wilson is much to the same effect, as is also that of Mr. Crow, both members of the Entally Conservancy Committee.

All the witnesses agree in considering Entally more healthy than Calcutta, and this though it is nearer to the Salt Water Lake, except Mr. Wilson, who says, that, although the climate is the same, he considers Calcutta healthier—He excepts, however, those spots where there are dense populations. Your Committee apprehend this exception embraces the whole of the Native Town.

Appendix (J) No. VIII. page 78.

Ibid.—No. VIII. *b.* page 78.

Mr. Wilson, in speaking of the filthy tanks and ponds in Entally, states, that in his Division, though the smallest yet not the least populous, every piece or parcel of ground has one or two of these ponds, or pits, which hold stagnant water during many months in the year, and that there must be upwards of a *thousand* of these ponds in his Division.—He says, the *distress* experienced from the want of publick Tanks, particularly in the hot season, is inconceivable.

In the hot season, when the Tanks get very low, the owners who had hitherto allowed their native neighbours water from their Tanks, are compelled to stop the supply: words are inadequate to express the grief of the neighbourhood on the occasion. At first they flock in numbers to the gates of the places where they were in the habit of getting water; and use intreaties and cries for admittance; but these avail not; they are driven away. They then go into the interior, and fetch water from Tanks which are sur-

rounded by trees—water on which the beams of the sun never play, and which of course must be very unwholesome—and by drinking this brackish water, subject themselves to many diseases.—He says, that this duty of procuring water for domestick purposes generally falls to the lot of the *females* of a Native family—many of whom are great sufferers by being obliged to leave their *infants* behind.—He states, that the yearly ravages of the Cholera is diminishing the population very much. The births fall short of the deaths. He adds, the want of a sufficient number of hands to clean out the Drains is severely felt. The Drains should be cleaned out at least twice every week ; whereas they are cleaned only *once* in the year ; some once in *two* years : and the Drains near the Tanneries *never*. The consequence is, that rank weeds grow in them ; stagnant water and filth, &c. remain in them, and emit a very offensive smell.

Mr. Crow says nothing can be in a more deplorable state than the Drainage, throughout his Conservancy Division ; most of these channels for the exit of rain water are completely blocked up, for want of hands to remove from them the vegetation of years, and the accumulation of mud ; that, in consequence of this, almost the whole country is under water during the rains, and it is not until the rains have ceased for some months, that these localities become dry.

Appendix (J) No. VII. pages 83, 84.

Mr. Martin furnished your Committee with a Note on the Draining of the Salt Water Lakes, and a Letter to the Chairman in continuation of that Note, to both of which very useful Papers they would humbly request your Honour's attention. He states most justly, that, as next in importance to the great works in and about the City of Calcutta to render its climate comparatively salubrious, the clearing of the Soondurbuns, and the Draining of the Salt Water Lakes claim our notice.

Appendix (I) No. I. page 1.
Ibid—No. 11. p 8.

He states the Soondurbuns as extending 180 miles South and East of us, and covering a superficies of 20,000 square miles, and upwards, and necessarily exercising a very powerful influence on the electric condition of our atmosphere, besides loading it with all kinds of exhalations. He states, that it is a popular, as well as a medical belief, in malarious countries, that by diminishing the humidity of the air you at the same time diminish its capacity for Marsh poison. He cites Dr. Fergusson, Dr. McCulloch, Dr. Arnold, Mr. Georgini, Dr. Wetherhead, the Statistical Reports of the Sickness in the Colonies, and Dr. Robert Jackson, who illustrates the circumstances under which Marsh Miasmata are observed to be generated, and the method of preventing their production.

Ibid.—No. 1. (A) page 2.

The result appears to be, that these noxious particles are not produced in ground covered with water though shallow, “for,” as said by Dr. Fergusson, “the Marsh must cease to be a Marsh in the common acceptation of the word, and the sensible putrefaction of water and vegetables must alike be impossible, before its surface can become deleterious.” So that this Malaria is not produced by the putrefaction of water and vegetables.

2ndly. It is said, that in Upper Canada Intermittent Fever is comparatively rare wherever the surface is covered with dense forest, even when the ground is wet and marshy—that the vicinity of lands recently cleared is more subject to it, particularly meadows, or open patches of the Forest, which, though denuded of trees, have not been brought under cultivation. This observation was made in a cold country ; but the property of trees powerfully to attract Marsh exhalation is said to have been practically known to the Ancients in Italy, and to be now exemplified in Demerara, and other parts of Guiana, where the humid heat cherishes the seeds of disease—

Ibid —page 10.

and Dr. Fergusson states, that the Marsh poison can with difficulty be separated from trees. It would therefore seem, that ground covered with trees is not rendered by that circumstance peculiarly productive of Malaria.

The circumstances which seem to produce it are,

Appendix (1)
No. 1 (A) page 3.

First.—Land being partially inundated, dry in some places, and wet in others, having pools and dry spots intermixed.

Secondly.—Its being boggy and soft from the mixture of earth and decayed vegetables with water.

Thirdly.—Its being subject to peculiar alterations of moisture and dryness, although, the moisture sometimes amounts to absolute inundation.

Fourthly.—The surface having been previously marshy, or covered with water, and having become arid and dry, with water to be found a short way below the surface.

It follows, that the Draining of a Lake or Marsh, unless it be rendered completely dry to a considerable distance below the surface, far from increasing the healthiness of its vicinity, is sure to be eminently productive of Malaria, and consequent disease, over all its neighbourhood, more particularly to the leeward of it; and that, on the contrary, if the ground were kept constantly and completely flooded, its former generation of Malaria while partially flooded and partially dry, or alternately flooded and dry, would be stopped. Thus the Marsh of Chartreuse near Bordeaux, being imperfectly drained in the year 1805, caused in that year alone 12,000 persons to be affected with Fever within the City, of whom 3,000 died within five months.

Your Committee, therefore, cannot agree with Mr. Strong in opinion, that such an operation would not be attended with danger here, “where the sun is all powerful, and where any Malaria caused by the Draining of the Lake would be rapidly dissipated by its prevailing heat;” for, if this were so, it appears to your Committee that Malaria generated by the natural causes of alternate moisture and dryness, or by an intermixture of pools and dry spots, would in like manner be dissipated before producing its febrile effects; which we know in this climate to be very far from the case.

Your Committee, therefore, could not concur in recommending an attempt to drain this Marsh, until it should be made certain that it can be at once perfectly, and effectually made dry to some considerable depth; and they were glad to find that the Warping of the Lake was considered by Mr. Strong himself the most advisable.

Ibid.—page 7.

It appears also to be a settled fact, that the admixture of sea water with the fresh water of a Marsh, increases the malignity of the exhalation issuing from it. As an instance of this, it is said, that the Marshy tract between the Ligurian Apennines and the Mediterranean, which had been a most pestilential tract of country, was rendered salubrious by the construction of Valvular Gates, which permitted the efflux of the water of the Marshes, but prevented any reflux of water from the Ocean.

Dr. Johnson states, that, without doubt, the fortunate change in the salubrity of the District was owing to the exclusion of the salt water, and that it cannot be denied that the admixture of salt and marshy water might have a deleterious influence in the production of Malaria, though it was also unquestionable that most deleterious exhalations issue from Morasses which have no communication with the Sea.

From what has been said it would seem, that the Salt Water Lake of Calcutta unites in itself every quality the most conducive to the production of the most poisonous, and abundant supply of Malaria.

Dr. Wetherhead ascribes the peculiar insalubrity in and about Rome to the character of the soil, which he states to be permanently moist all the year round a few inches under the surface; and in all the situations described by Dr. Fergusson as peculiarly destructive of the British Army in Holland, in the West Indies, in Spain and Portugal, where that distinguished Military Physician attended that Army on various services and expeditions, though the surface of the soil was quite dry, water was found a short way below it.

Appendix (I)
page 8.

Your Committee agree with Mr. Martin in thinking what Dr. Fergusson says upon this subject, applies with equal force in this, as in the Western Hemisphere. It is cultivation, which, Dr. Fergusson says, operates in converting an unhealthy Marsh into healthy fields. It acts by "opening the surface for the escape of pestilential gases, and exhausting the morbid principle by constant succession of crops; for, wherever Malaria prevails, the uncultivated survannah, even though used for pasture, is infinitely more pestiferous than the plantation." He instances the beneficial effects of cultivation following Drainage at the British Colony of Demerara, within six degrees of the Equator, where, he says, it has succeeded in rendering the cultivated portion of the deepest and most extensive Morass probably in the world an healthy, fertile, and most beautiful settlement.

In regard, therefore, to the Draining or Warping up of the Salt Water Lakes, your Committee think it quite established by the evidence, that all idea of an attempt to Drain them ought to be abandoned; but that the Warping them up, by the means which the Engineer Officers examined have proposed, ought to be immediately proceeded with. But your Committee recommend that, previous to this and without the loss of a day, orders should be given for immediately planting a thick belt of bamboos and forest trees upon the margin of the Lakes, between them and the Town and the Suburbs, as recommended in their First Report.

Appendix (G)
No. VI (a) page 39.
Appendix (J)
Nos. I to V. page 1 to 20.
Nos. IX a and X
pages 85 to 99.

Nothing is more necessary, in a sanitary view, to a considerable population inhabiting the borders of those Lakes, or having occasion, from their occupations as fishermen, boatmen, mat-makers, salt manufacturers, and others, to resort to them, and occasionally to reside there, than the converting this immense tract of Land from a pestiferous Marsh into cultivated fields. Neither, although less immediately essential to the salubrity of Calcutta, and its Suburbs, than the removal of the pestilential generators of disease, which now flourish, without mitigation, or controul, in the very heart of them, can it be supposed that their salubrity is sufficiently provided for, while this tract remains a Marsh in their close neighbourhood. The benefits to the cultivators, and the publick, from the addition of such an extent to the productive Land in the immediate vicinity of the Capital, is obvious.

Your Committee have stated that they had obtained information relative to the price at which the Lease granted by the Government of the Salt Water Lake might be repurchased.

Lord William Bentinck states that the Lake had been disposed of in perpetuity, but that there was a doubt whether the Land as well as the water and the right of Fishery belonged to the Zemindar or Sircar, and that the right was about to be tried. Your Committee have ascertained from Mr. Dampier, formerly Commissioner of the Soondurbuns, in his Letter to your Committee of the 1st of September 1841, that he had decided a suit for the assessment of the Lands from which the water of the Lake had receded in favour of the Zemindar; that his decision was appealed from by the then

Appendix (G)
No. I, page 5.

Appendix (I) No
27, page 46.

Revenue Commissioner; but was finally upheld by the Special Commissioner, so that the right of the Zemindar was completely settled.

Appendix (1) No.
26, page 45.

It appears from a Letter from Mr. Shaw, Officiating Commissioner of the Soondurbuns, of the 10th of September 1841, that Mr. Dampier's decision was pronounced on the 21st of December 1831, and affirmed on appeal on the 25th of April 1832. Mr. Dampier states to the Chairman of your Committee, as had been before stated to Lord William Bentinck, that he believed that the profits of the owners of the Salt Water Lake, that is of those to whom the Lake was made over in perpetuity, were about 16,000 Rs. per annum; but he adds, that there are other Zemindars holding Land upon the borders of the Lake, who also derive some profits from the Fisheries immediately adjacent to their Estates, and these latter would require to be indemnified for the loss they would sustain by the proposed Drainage—that he recollects having estimated roughly the probable expense of purchasing the Lake, and indemnifying all parties, at five lacs of rupees; but that he had reason to think that the whole might be now purchased (at the time he wrote) at a less cost.

See Municipal
Committee's Pro-
ceedings 11th May
1842, No. XXVII.

Your Committee have been in correspondence with one of the Zemindars, who has a right to one-half of the ground in question.

Ibid.—No. 30,
page 48.

He has signified his readiness to dispose of his share at such price as your Committee should think reasonable. Of course they could not fix the price; but they have reason to believe that it might be purchased for probably somewhat less than the ordinary of years purchase given for the clear profits of Land in the Mofussil, and from the Letter of Mr. Shaw, Officiating Commissioner, Soondurbuns, of date the 11th of February 1842, it appears that the parties, meaning all the parties, are willing to dispose of their property on obtaining what they consider its value.

On the whole, therefore, of the evidence your Committee humbly report to your Honour their opinion, that no benefit would be derived, at least none at all commensurate with its expense, from the carrying a Canal round the Lake to enter the Creek below Bhamungutta, as suggested by Lord Wm. Bentinck—that the part of the Canal called the Lake Channel ought to be widened in the manner proposed by Captain Boileau—and that the construction of a sufficient Towing-path and embankments along the Lake Channel, also as proposed by that Officer, which would render the Lake Channel quite sufficient for all the purposes of the Navigation, as well as his proposal of widening the Balliaghatta Canal, and the excavating small Docks at convenient distances along the Entally and Circular Canals, for the accommodation of the great number of Boats which lie there to discharge their cargoes, are objects which it is of great importance as speedily as possible to effect.

Appendix (3)
No. I, page 4. No.
IX. and No. X.
pages 93 and 98.

But your Committee are of opinion, that the Circular Canal ought not to be continued behind Entally and Ballygunj into Tolley's Nullah, as proposed by Captain Boileau, for the reasons assigned by Colonel Forbes. Your Committee, however, in answer to a question put to Col. Forbes subsequently, have obtained his opinion, that the obstruction in the Circular Canal, and in Tolley's Nullah, from want of sufficient accommodation for the craft, may be remedied by the formation of Boat Basins, or Wet Docks, in the line that would have been given to the Circular Canal, if it had been prolonged to Tolley's Nullah, but separated from each other where this line would be intersected by the Town Drainage, Scouring Canal, and Side Sewers proposed; and, having re-examined the levels, he finds that the Town Drainage Canal and Side Sewers could not, consistently with keep-

ing up the uninterrupted Drainage of the Town, be carried under the Circular Canal, even with the expensive contrivance of locks at each end of the prolonged portion of the Canal to keep up its water surface to the level of high water in Tolley's Nullah. Your Committee, therefore, humbly recommend the formation of the Basins or Docks suggested by Col. Forbes for the remedy of the great inconvenience spoken of by Captain Boileau.

Your Committee also humbly recommend that Tolley's Nullah be surveyed, cleared out, and deepened wherever required, and that all obstructions, as well for the passage of Boats, as for the flow of the water, be removed, under the directions and superintendence of a competent Engineer.

They now beg to call your Honour's attention to a considerable improvement, which it is desirable to make in Tolley's Nullah by straightening its Channel at some distance down.

The great obstructions, and crowded state of this Canal, and its insufficiency to the important purposes to which it would otherwise be subservient, have been already noticed; but it will be observed from inspection of the survey of this Canal, a Lithographick copy of which is inserted in the Appendix, that, from the River Hooghly down to a little below old Tolleygunj near Cherooly, the line of the Canal is sufficiently straight, although part of it is described as almost dry at low-water, and only navigable in spring tides. But from this point it diverges suddenly a considerable distance to the East, where it becomes again usually almost dry at low-water, and only navigable during spring tides. At that point it makes a sudden bend, almost at a right angle, to the West, continuing usually almost dry at low-water, till it comes to Goryahat, when it again resumes its northerly course, and continues it in a sufficiently straight line down to the Tardah Nullah. The distance from Cherooly to Goryahat in a straight line appears to be about 2 miles. Your Committee would humbly recommend the excavating a Canal between these places. It would not only save a considerable distance, but would render that part of the communication navigable at all times.

Appendix (H) No.
2, page 5
Appendix (G) E.
59, page cci.

If this work is not done, it will be necessary to deepen the tortuous line, probably at a much greater expense.

Below Goryahat it appears that there is a short distance which may require deepening. But all this of course will fall under the observation of the Engineer appointed to survey this important Cut or Nullah, the improvement of which appears to your Committee to be one of the objects, whose accomplishment is the most essential to the commerce of Calcutta, and the adjacent country.

The number of Boats which entered Tolley's Nullah from the Soondurbuns from the 1st of May 1837 to the 30th of April 1845, was 148,575. The number of Boats which entered from the Hooghly was 134,140. The Tolls collected from Boats which entered the Nullah from the Soondurbuns was Rs. 2,41,655. The Tolls collected from Boats which entered the Nullah from the River Hooghly was Rs. 1,44,160. The great importance, therefore, of the traffick which passes through Tolley's Nullah is apparent.

Appendix (I) No.
XVI. a, page 105.

Your Committee would also humbly suggest a re-survey of the lower parts of Major Schalah's Canal, as at present excavated from the Salt Water Lake to Hosynabad, with the view of perfecting Towing-paths, and repairing and deepening the Canal wherever this may be necessary; and they would beg earnestly to submit to your Honour's consideration, the construction of the Bunds upon the three Khals mentioned in the preceding

parts of this Report, and the completion of that Canal from Hosynabad to Koolna, agreeably to the line reported by Major Schaleh, and approved by the Committee of 1822, and the Government of that period.

Appendix (J)
page 5

Your Committee would also recommend a survey, with a view to the execution of the Canal suggested by Captain Boileau through Mr. Heatley's lands near the Booree-Gang, which that Officer states would shorten the Navigation of the Mofussil Canals two tides, or perhaps 24 hours, the distance to be cut being only $1\frac{1}{2}$ mile, and the probable expence only 30,000 Rupees.

Supr. page 7.

Appendix (J)
No. XXXIX.
page 145.

With reference to the outlay, which your Committee have ventured to recommend it to the Government to incur upon the completion and improvement of those important Canals, they would beg again to call to your Honour's attention the Resolution recorded by the then Government of India on the 20th of March 1823, so much to its honour, and of which they find the principle again recognised in the official letter of date the 10th of July 1843, from Mr. Beadon, Under-Secretary to the Government of Bengal to the Military Board. From the statement compiled by the Clerk to your Committee it appears, that there is now in the hands of the Government a sum amounting to Rupees 15,14,782:13:5, being the surplus of the Tolls received upon the Calcutta Canals alone, after deducting the whole amount expended upon their formation and repair, from their commencement. With such a sum at their credit, your Committee think they have some claim to attention.

Generally upon the subject of these Canals, your Committee would humbly suggest for your Honour's consideration, whether it would not be advisable to divide the practical management of the Canals between two distinct Officers,—the one not an Engineer, but a good accountant, and an active and intelligent man, who should have charge of collecting, and accounting for the Tolls,—the other an Engineer Officer, who should have charge of regulating the passage of the Boats, and preventing useless delay, and thereby unnecessary crowding—the keeping the Canal free from wrecks and obstructions of all sorts, and the Banks from being damaged—and generally recommending from time to time all such works as are necessary to remove defects in the Canals, and to increase their usefulness—and the carrying the works which should be approved into execution. It appears to your Committee quite certain from the immense number of Boats of all descriptions, which pass daily through the Canals, and from the nature of the Canals themselves, and of the locality in which they are situated, that it is wholly impossible for one Officer to discharge all these duties in such an efficient and useful manner as is consistent with the publick benefit, and the credit of the Government; not to mention that they require persons of wholly different characters,—and that the one should be stationary in an Office, and the other constantly moving about.

Appendix (I) No.
31. a. page 49.
Ibid.—No. 31.

An extract from a Despatch from the Honourable Court of Directors to the Governour of Bengal, under date the 26th of October 1842, was transmitted to your Committee, along with a Map alluded to in that Despatch, by order of the Honourable the Governour of Bengal.

Ibid.—No. 31. a.
page 50.

The Despatch transmitted a Copy of a Letter from Mr. Henry Wood to the Court, on the Drainage of Calcutta, and Protection of the City from inundation during spring tides.

Your Committee having previously fully reported on the Drainage, and not being aware of any danger which the City lay under from inundation, did not think it necessary to trouble the Government upon this particular Letter, but reserved it for observation in this Report.

The Chairman, by desire of your Committee, communicated these Documents to Colonel, then Major Forbes, of the Engineers, requesting him to take the trouble of drawing up a short Note on Mr. Wood's Letter, which might enable your Committee to make a satisfactory answer upon the subject to the Government.

Appendix (1).
No. 33, page 53.

They received from that gentleman a Letter addressed to their Chairman, containing in their opinion a satisfactory answer to Mr. Wood's proposal. They beg to refer your Honour to Colonel Forbes' Letter, in which he goes with sufficient minuteness into the particulars of the proposed Plan, showing to the satisfaction of your Committee that the erection of the Embankment beyond the Suburbs of the City, and along the Edge of the Salt Water Lake, &c., such as described by Mr. Wood, "is not merely unnecessary for the protection of the Town and Suburbs, but, under the circumstances speculated on by Mr. Wood, chiefly an extraordinary rise of Tide in the River Hooghly, could scarcely fail of producing the very effect it was intended to avert, by damming up the water, which under such extraordinary circumstances would overflow the River Bank, and which, if not checked by any embankment, or other impediment, would be able to discharge itself into the Salt Water Lake, where it would find a surface of 40 square miles of water, seven feet at its high-water level below the level of the City, and a still lower level of country extending 150 miles, which would pass harmlessly off to the Ocean any body of water, that, barring a second deluge, could ever overflow the River Bank."

Ibid. — No. 34,
page 53.

Your Committee need hardly add, that Mr. Wood's proposal, founded no doubt in the best intentions of benefitting the Capital of India, proceeds upon a want of knowledge of the levels of the Country, which would have been corrected, had reference been made to the accurate surveys detailed in the Appendices to your Committee's First Report.

The City of Calcutta stands in no need of protection from inundation, which it has no cause to fear; but stands in great need of Draining and Cleansing. This might be accomplished, as your Committee believe, at a greatly less expense than the costly Embankment proposed by Mr. Wood, by the Plan your Committee have suggested in their preceding Report, which would accomplish its purpose without detriment or danger; and this Mr. Wood's Plan assuredly would not.

Your Committee had the honour to receive a considerable time ago from the Government of Bengal, Papers relative to certain Municipal Laws proposed by Mr. McFarlan, then Chief Magistrate of Calcutta, which the Government of India had directed to be forwarded to the Deputy Governour of Bengal, with a request that the necessary communications relative thereto, might be made to your Committee.

Appendix to Ap-
pendix (F)

These Papers consisted of a Letter from the Secretary to the Indian Law Commission to the Secretary to the Government of India, of date the 19th of January 1838, a Letter from the same person to D. McFarlan, Esq. of date the 23rd of September 1837, and that gentleman's answer of date the 12th of October 1837. These Papers were taken into consideration by the Honourable the President in Council, on 27th February 1838.

Ibid.
Ibid.

Ibid.
Ibid.

Two of the matters only, to which the measures proposed related, the opinion of your Committee was desired upon, viz. the necessity of passing a Law for the regulation of Ferry Boats plying between Calcutta and the opposite bank of the River, and a Law to prevent the obstruction of Public Ghauts by Boats remaining for a long time in front of them.

Some further inquiry being necessary in regard to the practical means of regulating these Ferry Boats, and removing this obstruction, your Com-

mitted, in order to prevent the further extension of the delay, which, they regret to say, has already taken place in the preparation of this Report, will make these matters, and that of the new Clinical Hospital, the subject of a short supplement to this Report.

We have the honour to submit this our Report to your Honour's consideration.

COMMITTEE ROOM :—TOWN HALL.
7th August 1846.

<i>(Signed)</i>	J. P. GRANT, <i>Chairman.</i>
„	H. GOODWYN, <i>Engineers.</i>
„	A. H. E. BOILEAU, <i>Engineers.</i>
„	F. P. STRONG.
„	A. ROGERS.
„	PROSSUNNOCOOMAR TAGORE.
„	J. GRANT, <i>Surg. Med. charge 2d Bat. Art.</i>
„	RUSTOMJEE COWASJEE.
„	J. H. PATTON.

THIRD REPORT

OF

THE COMMITTEE

APPOINTED BY

The Right Honourable the Governour of Bengal

FOR THE

ESTABLISHMENT OF A FEVER HOSPITAL,

AND FOR INQUIRING INTO

**LOCAL MANAGEMENT AND TAXATION
IN CALCUTTA.**

Calcutta:

BISHOP'S COLLEGE PRESS.

1847.

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THIRD REPORT

Of the Committee appointed by the Right Honourable the Governour of Bengal for the establishment of a Fever Hospital, and for inquiring into Local Management and Taxation in Calcutta.

TO THE HONOURABLE THE DEPUTY GOVERNOUR OF BENGAL.

AT the conclusion of their First Report, your Committee stated, that they had not been able to extend their inquiries to the various questions relating to the Drainage of the Salt Water Lake, upon which the Government had been pleased to refer to them several papers—but that to the consideration of those papers, and the questions connected with that important and difficult measure, as well as to the reporting upon the new Clinical Hospital, your Committee would forthwith address themselves, making them the subject of a Supplementary Report.

Upon the questions relating to the Drainage of the Salt Water Lake, and arising out of the papers directed by His Honour the Deputy Governour of Bengal to be transmitted to them, your Committee have had the honour to report in their Second Report, of date the 7th August 1846.

At the close of this Report your Committee stated, that they had had the honour to receive a considerable time ago from the Government of Bengal, Papers relative to certain Municipal Laws, proposed by the late Mr. McFarlan, then Chief Magistrate of Calcutta, which the Government of India had directed to be forwarded to the Deputy Governour of Bengal, with a request, that the necessary communications relative thereto might be made to your Committee—that these papers were taken into consideration by the Honourable the President in Council on the 27th February 1838—that two of the matters only, to which the measures proposed related, the opinion of your Committee was desired upon, *viz.* First, the necessity of proposing a Law for the regulation of Ferry Boats plying between Calcutta and the opposite bank of the River; and Secondly, A Law to prevent the obstruction of publick Ghauts—and that some further inquiry being necessary in regard to the practical means of regulating these Ferry Boats and removing this obstruction, your Committee would make these matters, and that of the new Clinical Hospital, the subject of a short Supplementary Report.

Your Committee accordingly now proceed to report upon them.

THIRD REPORT OF THE COMMITTEE ON THE

First, The Constitution of the Clinical Hospital and the amount of the actual and probable future benefits which are and will be derived from that Institution, and the addition to it of a Fever Hospital or Ward, which has been proposed by the Council of Education, in conjunction with your Committee.

The excessive insalubrity of the City and Suburbs, and the amount of medical treatment and care bestowed upon the Native population, have been stated by your Committee in their First Report, and will also be found in the Abridgement of that Report, printed in the year 1845.

From that Report it appears, that the medical and surgical charities existing previous to 1838 were the Native Hospital, the Calcutta General Hospital, the Police Hospital, the Leper Asylum, the Insane Hospital, and the Eye Infirmary—that of these the Police Hospital was only accessible to the entirely destitute, who were found helpless and houseless in the Streets, and who were carried there as a matter of Police by its Officers—and that the Native Hospital being intended for surgical cases, its accommodation for medical cases was necessarily very limited, and their admission not free from inconvenience with reference to its principal object.

These two Institutions, therefore, were the only ones which could contribute in any degree to the purpose of a General Hospital for the reception of Native patients—although the Police Hospital was open to the admission of European Male patients, as well as Natives of both sexes. The General Hospital is limited to the reception of Europeans and Americans under certain regulations, in addition to the patients it receives as a Military Hospital. Upon this institution your Committee were prohibited by the then President in Council, for reasons which are mentioned in their First Report, from reporting very full, and, as they thought, important inquiries which they had completed.

Appendix (K)
page 108, No.
XXXIII.

Appendix (B)
page 16 No. 10. (B)

A Medical College having been opened in April 1835, the Council of that College submitted to the General Committee of Publick Instruction, on the 9th of March 1837, a Report, of which the object was to recommend that an Hospital might be established near the Medical College, in order that the pupils might have the benefit of Clinical instruction.

Ibid.—page 16,
No. 10. (A)

The General Committee of Publick Instruction considering this arrangement very desirable and necessary, recommended it for adoption to the Right Honourable the Governor General in Council, by a Letter addressed to the Secretary to the Government, of the 15th of March 1837. This proposition was readily adopted by the Government.

Appendix (K)
p. No. XXXIII.

The proposed Clinical Hospital was opened in April 1838, consisting then of one Ward. Since that time it has been increased by subsequent additions to its present size.

Ibid.—page 26,
No. XIV.

It consists at present of two Hospitals attached to the Medical College, and situated within its walls, the one for Males and the other for Females.

The former is a General Hospital for the admission of medical and surgical cases indiscriminately, with the exception of small-pox and contagious diseases: the latter is an obstetrick, as well as a General Hospital for women and children.

Upon this your Committee would remark, that it were advisable to separate the medical and surgical cases, and that there ought to be provision made for the reception of cases of small-pox, and contagious diseases. It should also appear advisable that cases of midwifery should be kept apart from those of women and children suffering under general disease.

Returns of Diseases treated in the male and female Hospital of the Medical College during the year from 1841 to February 1846, and the results, will be found in Appendix (K) from page 39 to page 75. It appears from these Tables that the number admitted during these years was, of

Europeans,	5,347
Of whom there died,	603
And were discharged,	4,536
And of Natives admitted,	5,149
Died,	550
Discharged,	4,620

Appendix (K)
pages 57 to 62.

These Returns do not show of the numbers discharged, how many were cured, and how many left the Hospital, either of their own accord, or as being cases which were considered to admit of no further treatment with the chance of success. It appears, therefore, that the amount of mortality, compared with the numbers admitted, may be taken at 9 per cent., and as nearly as possible equal in the cases of Europeans and Natives. But of the Europeans 75 per cent. are medical cases, while of Native cases the number of medical and surgical cases is nearly equal. At Rome, in an equally malarious country, though cooler climate, the deaths in Hospital are 10 per cent. In the General Hospital of Calcutta they are 14.6 per cent. [First Report suppressed sheets, page 243, Appendix (F).]

Making every allowance for the possible number of patients who left or were discharged uncured, the extensive utility of this Hospital cannot be doubted. Dr. Mouat states, that the great majority of the cases enumerated in the list either were discharged cured, or died—that some few left the Hospital before their cure was completed—but in general the opinion of the medical Officer guided them.

Ibid.—page 27.

But it appears, that this Hospital is so far from being adequate to the reception of the patients who would willingly resort to it, that, from the Male Hospital being separated into two nearly equal divisions, one of which is assigned to Christians, and the other to Native patients, the largest and most numerous class of patients consists of European seamen, while the Hindoos stand only second in regard to number, the Mohammedans third, and the Native Portuguese Christians last: whereas, if there were more room, Dr. Mouat reports, that the Native patients would be by far the most numerous.

It appears that of Native patients the proportions of medical and surgical cases being nearly equal is the result of the inadequate accommodation afforded by the Hospital, not of an equality in the relative occurrence of the two great classes of disease.

Dr. Mouat says, that there is one Ward devoted to medical, and another of similar dimensions to surgical cases of Native patients, and that he has no doubt that a much larger number of both would be admitted, if the Hospital could contain them; and that certainly the preponderance in that case would be of medical over surgical cases.

Ibid

Nearly all the admissions, he says, are voluntary applications for relief; those from accidents, wounds, poisoning, &c. sent in by the Police, not being more than one in twenty.

Ibid.—page 28.

He says, that the number of applicants for relief by far exceeds the means of accommodation afforded by the Hospital in the proportion of at least 3 to 1; and that the average monthly admission of Native patients is about 75, whereas, in even ordinary times of sickness, he has reason to believe, that at least 200 beds, if not a larger number, would be occupied.

Ibid.

4 THIRD REPORT OF THE COMMITTEE ON THE

There can no longer, therefore, exist in the mind of any reasonable man the doubt, which your Committee long since thought themselves warranted to discard, viz., that there is any greater disinclination amongst the Native inhabitants of Calcutta than exists elsewhere, to the taking advantage of the benefit held out by a well-conducted Hospital in cases of medical and surgical suffering.

Appendix (K)
page 4, No. 1 e

Your Committee, therefore, will be excused for the deep regret they felt, and continue to feel, at the answer they received on the 10th of May 1843 from the then Deputy Governour of Bengal, to the wish they humbly expressed to be made acquainted with the intentions of the Government, relative to the contribution the Government was disposed to make in aid of the private subscription obtained for the establishment of a Fever Hospital, viz. that, adverting to present financial considerations, His Honour deeply regretted that Government was debarred from incurring any avoidable expense, although the Letter also said that His Honour was fully sensible of the importance of the object proposed by the Committee.

Ibid.—page 2, No.
1 a (1)

This Correspondence arose from a request addressed to the Chairman by the Governours of the Native Hospital, on the 21st of February 1843, that he would ascertain whether it would be consistent with the views of the Fever Hospital Committee to apply the Funds in their hands for the erection of a Fever Hospital, to the erection of a Fever Ward attached to the Native Hospital.

Ibid.—page 3, No.
1 c. (1)

The Chairman having laid this matter before them, your Committee thought, that, keeping in view their Report submitted to Government on the 7th of January 1840, it was proper, before replying to the proposition of the Governours of the Native Hospital, to submit that proposition to His Honour the Deputy Governour of Bengal, upon whose reply that of your Committee to the Governours would much depend.

Ibid.—page 3, No.
1 d.

On the 5th of April 1843, the Chairman addressed a Letter to the Secretary to the Government of Bengal, transmitting to him copies of the Letters which had passed between the Committee and the Governours of the Native Hospital: and informing him that the subscriptions received for the Fever Hospital in the hands of the Committee's treasurer, the Union Bank, amounted on the 31st December 1842, to Co's. Rs. ... 52,037 5 5 And that the amount of subscriptions not yet received

was on the same date, Co's. Rs.	6,675 7 9
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Total,	58,712 13 3
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and, referring to the Report of your Committee, of date the 7th of January 1840, upon the manner in which the subscriptions for the Fever Hospital originated, and the grounds upon which they were obtained, the views taken by Government at that time on that subject, and their general Report relative to the establishment of a Fever Hospital, he stated that the Committee, not having received any intimation of the intentions of Government relative to the contribution the Government was disposed to make in aid of the private subscriptions obtained, thought they could not with propriety dispose of the Funds in their hands, which they had retained with the knowledge and sanction of the Government, without first obtaining the approbation of the Government.

Ibid.—page 4, No.
1 e

In the Letter of the 10th of May 1843 above-mentioned, the Deputy Governour's full consent was expressed that the Committee should expend the Funds at their disposal, in such manner as might seem to them best fitted to carry out the views of the subscribers.

On the 25th of October 1843, Dr. Mouat, who is Secretary to the Council of Education, addressed a Letter to the Chairman, stating, that he was told that certain Funds belonging to the Fever Hospital Committee, which he styles by mistake the late Fever Hospital Committee, were then lying idle, that they were very much in want of a large Native Hospital to the Medical College, being from the limited size of their present Hospital compelled to send away a large number of applicants suffering from Fever, Dysentery, and a variety of other severe and dangerous maladies, and requesting permission to wait upon the Chairman upon this subject.

The Chairman had an interview with Dr. Mouat accordingly.

On the 26th of April 1844, the Chairman addressed a Letter to Dr. Mouat, in which with reference to Dr. Mouat's communication of the 25th of October preceding, he stated the correspondence of the Committee with the Government above-mentioned, and that the Committee had also received from the Governours of the Native Hospital an application of the same nature with that of the Medical College, and were, therefore, desirous of ascertaining, whether, if the money at their disposal were expended in the erection of a large Native Hospital, or Fever Ward, adjoining the Medical College, the Officers of that institution would undertake to afford to the patients, which such Ward might be capable of receiving, the requisite supplies of provisions and medicines, medical and other attendance necessary to their treatment. The Chairman had the honour to receive, under date the 8th of May 1844, the answer of Dr. Mouat; in which he stated, that the Medical Officers of the institution would gladly afford every aid and attendance to the patients of the Fever Hospital, and furnish it with Clinical Clerks, dressers, and every description of medical attendance, but that with respect to the supplies of medicines and diet, the Council had not the power of granting them without a special reference to Government, which had been sent in.

On the 11th of July 1844, Dr. Mouat transmitted to the Chairman the copy of a Letter from the Under-Secretary to the Government of Bengal to the Secretary to the Council of Education, under date the 8th of July 1844, stating that he was directed by the Honourable the Governour of Bengal to inform him, that, if the money now in the hands of the Committee were expended in the erection of a large Native Hospital adjoining the Medical College, His Honour would undertake to provide at the publick charge such establishment and medicines as might be necessary for the support of the institution. On the 6th of August 1844, Dr. Mouat addressed a Letter to the Chairman, by direction of the Council of Education, informing him, that Baboo Muttyloll Seal had munificently presented to the Medical College a slip of ground, extending from the east gate of the College to College Street, as a site for the proposed Fever Hospital, should the Funds for its erection be placed at the disposal of the College.

On the same 6th of August 1844, your Committee met, and resolved, that the sum at the disposal of the Committee, together with such further sums as might be collected of the subscriptions not yet paid in, be appropriated to the erection of a Fever Hospital on the ground mentioned in the Letter under yesterday's [by mistake for this day's] date, to the Chairman from the Secretary to the Council of Education.

On the 26th of April 1844, the Chairman had addressed a Letter to the Secretary to the Native Hospital, in which with reference to that Gentleman's Letter of the 21st of March 1843, above-mentioned, he informed him of the correspondence with the Secretary to Government, of the application received from the Medical College, and the desire of your Committee, in order to enable them to dispose of the Fund in their hands, to ascertain

Appendix (K)
page 13, No. IV.

Ibid. - page 14,
No. IV. *b*.

Ibid. - page 15,
No. IV. *c*.

Ibid. - page 15,
No. IV. *d*
Ibid. - page 16,
No. IV. *d* (1)

Ibid. - page 16,
No. IV. *e*.

Ibid. - page 17,
No. IV. *f* (1)

Ibid. - page 18,
No. IV. *g*

- whether, if the money were expended in the erection of a Fever Ward adjoining the Native Hospital, the Governours of that institution would undertake to offer to the patients such Ward might be capable of receiving, the requisite supplies of provisions and medicines, medical and other attendance necessary to their treatment. To this Letter the Chairman received an answer from Dr. Stewart, Secretary to the Native Hospital, of date the 10th of June 1844, saying, that in reply he was directed by the Governours to state, that, should the amount be sufficient for the purchase of land, building a Ward, and the other necessary charges attendant on keeping up the Ward in a state of efficiency, the Governours would with pleasure undertake the management of such additional Ward.

Appendix (K)
pages 18 & 19, No.
IV. h

Ibid. - page 20,
No. VI.

On the 28th of February 1845, your Committee received from Dr. Mouat a Letter, stating that the amount then subscribed for the proposed Fever Hospital, [in addition to the Funds in the Committee's hands,] amounted to Rs. 19,055 : 5 : 0. On the same day the above Letter, along with a statement of the Fever Hospital Funds, was submitted to a Meeting of your Committee, showing an aggregate sum of Rs. 75,394 : 2 : 0 available for the erection of the proposed Fever Hospital.

Ibid. —page 20,
No. VII. a.

Taking into consideration the undertaking by the Government of Bengal above-mentioned, and the saving of any outlay for the purchase of land, which arose from the munificent Donation of Baboo Muttylohl Seal, and also the advantage that would be derived from connecting the Hospital with the Medical College, for the purpose of Clinical instruction, and having had before them the plan of Capt. Goodwyn, the successor of Major Fitzgerald, drawn at the desire of the Council of Education in communication with the Members of the Medical College, with some other plans of a Fever Hospital which the Chairman had received from Dr. Strong, with the concurrence as he understood of the Secretary to the Council of Education, which plans he had submitted to Capt. Goodwyn for his remarks, and which plans, with those remarks, he submitted to your Committee, your Committee resolved, that they approve of the plan of a Fever Hospital by Capt. Goodwyn, and that, if the Council of Education are prepared to adopt, and will undertake the execution of the said plan, with such curtailments as the means available might require, the Funds in your Committee's hands should be at the disposal of the Council of Education.

Ibid. - page 21,
No. VII. a.

Ibid. —page 17,
No. IV. f. (1)

The Chairman, therefore, by the direction of the Committee, transmitted, on the 6th of August 1844, to Dr. Mouat, Secretary to the Council of Education, a copy of the Resolution agreed to by your Committee on that day, and informed him, that as soon as the plan of the Hospital was finally approved by the Council of Education, and by your Committee, the Funds to the credit of the latter, in the hands of the Union Bank, would be made applicable to defray the expense of the building.

From this date to March 1847, no answer was received from the Council of Education.

Ibid. —page 22,
No. VIII. a.

On the 16th of that month, the Chairman addressed a Letter to their Secretary Dr. Mouat, calling his attention to the Chairman's Letters of the 26th of April 1844, 30th of May 1844, 6th of August 1844, and 10th of March 1845, relative to the placing at the disposal of the Council of Education the Funds in the hands of your Committee, for the purpose of erecting a Fever Hospital, or Ward, contiguous to the Medical College Hospital, and to no answer having yet been received by your Committee, to enable them to make over the sum in their hands to the Council, and, he said, if he did not receive such answer, he should take the opinion of the Committee upon the propriety of vesting in Government Security the sum thus in

the Union Bank, amounting to Rs. 60,313 : 14 : 2. In reply to this Letter he received from Dr. Mouat a Letter, dated the 30th of March 1847, acknowledging the receipt of the Letters mentioned by the Chairman, stating the reasons which had heretofore prevented the return of a definite reply to those Letters—that the Chairman was aware that the Government had undertaken to maintain and support the Fever Hospital in connection with the Medical College—that circumstances connected with the expediency of increasing the Medical College and removing it to a more favourable locality, had caused the building of the Fever Hospital to merge in the question of constructing a new Medical College, for which a very beautiful design had been furnished by Major Goodwyn, and in which provision had not only been made for a special Fever Hospital but for a Male and Female Hospital, &c—and that the whole of that question being then under the consideration of Government, the Council were not then in a position to return a definite reply to the Chairman's communication. He added, that the Funds collected by the Council of Education for building a Fever Hospital amounted already to Co's. Rs. 40,000, of which sum Rs. 2,472 were realized during the past year by interest from judicious investments, the greater part being then invested in Government Security, and that, should the Committee be disposed to make over in trust to the Council the Funds then in the Union Bank, they would be happy to secure them in a similarly productive manner, and to guarantee, not only that they should be strictly devoted to the purposes for which they were collected, and that the structure should be ornamental to the City, as well as constructed with every modern improvement advisable and practicable, but that the Council would spare no effort in their power to cause the design to be carried into effect as early as possible.

Appendix (K)
page 22, No. VIII.
b.

Major Goodwyn's plan was forwarded by Dr. Mouat for the information of the Committee.

On the 1st of April 1847, the Chairman put in circulation to the Members of your Committee a Minute, with which he circulated the answer of Dr. Mouat last mentioned, and requested the permission of the Committee, if they agreed with him in approving of this measure, to make over the Funds then in the Union Bank for the purpose of erecting a Fever Hospital to the Council of Education, in trust for the purposes, and with the guarantee mentioned in Dr. Mouat's Letter, especially stipulating that the Funds made over by the Committee to the Council of Education should be vested in Government Security.

Ibid —page 22,
No. VIII.

He also circulated among the Members Major Goodwyn's design for the exterior and plan for the interior of the proposed building. He said that the Committee would observe, that the Wards of the proposed Fever Hospital were calculated to receive 350 patients at a time, capable at the average of 12 days for the duration of treatment in cases usually received in a Fever Hospital, of receiving in the course of a year about 500 patients, and that it was explained to the Chairman that the lower story was proposed to be vaulted for the circulation of air—that the lowest Wards for the reception of patients would be 15 feet above the ground—and that the expense of completing the Fever Hospital was estimated at a trifle above one Lakh of Rupees, which sum was already collected. To the request contained in this Minute of the permission of your Committee to make over the Funds in the Union Bank to the Council of Education, in trust for the purposes and with the guarantee mentioned in Dr. Mouat's Letter, and under the stipulation suggested in the Minute, the Chairman received the unanimous consent of your Committee.

Ibid —page 21,
No. VIII.

Appendix (K)
page 23, No. IX

The Chairman accordingly wrote to the Secretary to the Union Bank on the 14th of April 1847, directing him to transfer or pay over the Funds then in the Union Bank to the Council of Education.

Ibid.—page 24,
No. X

Of all these circumstances the Secretary to the Council of Education was informed by the Chairman on the said 14th of April 1847, and on the 23rd of April 1847 Dr. Mouat, the Secretary, wrote to the Chairman, that he was directed by the Council of Education to inform him, that they would gladly accept the trust on the terms mentioned, and spare no effort to procure a speedy and satisfactory fulfilment of the wishes of the Committee, and that the Funds should be duly invested in Government Securities.

Ibid.—page 76,
No. XV. a.

The sum in the hands of the Union Bank, on the 22nd of May 1847, in account with your Committee, amounted by the Bank Books delivered to Dr. Mouat, inclusive of Sicca Rs. 7,000 or Co's. Rs. 7,466 : 10 : 8, in Government Securities, to Co's. Rs. 61,248 : 7 : 10, and the sums due by subscribers not then realized amounted to Co's. Rs. 6,675 : 7 : 9, making in all Co's. Rs. 67,923 : 15 : 7.

Ibid.—page 38.

In his answers to the queries put to him by your Committee, for the purpose of enabling them to complete this Report, Dr. Mouat states, on the 13th of May 1847, that the Fever Hospital Fund which had then accumulated, amounted to 40,544 : 2 : 0, of which there had been expended in levelling the ground presented by Baboo Muttyloll Seal and other casual expences, Rs. 177 : 14 : 3, showing a net sum in the hands of the Council of Education of Rs. 40,366 : 3 : 9. To this is to be added the sum above-mentioned, actually collected by your Committee and in the hands of the Union Bank, Co's. Rs. 61,248 : 7 : 10; showing the sum total now at the disposal of the Council of Education for the purpose of erecting the proposed Fever Hospital to be Co's. 1,01,614 : 11 : 7. Capt. Goodwyn's estimate for the Hospital designed by him, amounts to Rs. 1,30,000.

Dr. Mouat, in the above-mentioned letter of date the 13th of May 1847, states, that should the general proposal of removing the College itself be found impracticable, the Council trust, that the extension of the institution in its present position, and building a Fever Hospital, will be sanctioned by Government at an early period. Your Committee, therefore, trust, that, under the enlightened patronage of the distinguished persons now at the head of the Government of India, and of the Government of Bengal, the creation of this Hospital, one of the great objects of the long and anxious solicitude of your Committee, is in a fair way of being speedily accomplished; and it is impossible to bestow too much commendation on the benevolent exertions of the Council of Education and of their indefatigable and praiseworthy Secretary Dr. Mouat, in furtherance of an institution likely to alleviate so great an amount of human distress.

Ibid.—page
Nos. XXXV. and
XXXV. a and No.
XXXVI. a.

The Chairman of your Committee received on the 19th of June and 22nd of July 1847, two Letters from Dr. Mouat of date the 19th of June and 22nd of July 1847, accompanied by a copy of a Letter from Major Goodwyn Civil Engineer to him, strongly recommending the abandonment of the present site of the Medical College and its Hospital and the fixing upon the ground now occupied by the General Hospital for the site of a new Medical College, and the General and Fever Hospitals proposed to be erected. These Letters were accompanied by specifications and estimates. The Chairman in answer to Dr. Mouat's Letters felt himself under the necessity of expressing his personal dissent from this proposal with his reasons for his difference of opinion, and lost no time in circulating among the members of your Committee the Letters of Dr. Mouat with their inclosures

and a copy of his own answer to that gentleman. These with the observations of each member of your Committee in writing returned to the Chairman will be found in the Appendix.

It will be seen that all the members of your Committee agree with the Chairman in deprecating the erection of the Fever Hospital on the site of the present General Hospital except Major Goodwyn, the original suggestor of the plan. The Chairman had the honour to receive from Dr. Mouat a reply to his letter, expressing his dissent from Major Goodwyn's Proposal, dated the 7th of August 1847, in which he states his opinion to be, that *if the ground on which the General Hospital stands were artificially elevated, perfectly drained, with a clear space of sufficient extent on every side, surrounded by no dead walls, and the neighbouring village kept in a state of salubrity instead of being the receptacle of filth, of which it has the appearance at present*, its position would be well adapted for the purposes of a New College and Hospitals attached to it. But he admits, that the distance from the Town and Port of Calcutta is the greatest and most formidable objection, and upon this, after more mature reflexion, he very candidly states that he is inclined to retract his former opinion and to coincide in the views of the Chairman and the Committee. All these papers are printed in the Appendix and have been transmitted to the Secretary of the Council of Publick Instruction, and it will be for your Honour on receiving their Report to decide this important and most interesting question.

Your Committee now proceed to inquire into the necessity of passing a Law for the Regulation of Ferry Boats; and a Law to prevent the obstruction of the publick Ghauts.

On the 23rd of September 1837, the Indian Law Commission, through their Officiating Secretary Mr. Grant, addressed a Letter to D. McFarlan, Esq., then Chief Magistrate of Calcutta, upon certain suggestions offered by that gentleman for the enactment of certain legal provisions connected with the Police of Calcutta. In his answers to that Letter Mr. McFarlan among other things refers to the Ferry Boats, and says, that he has had people brought before him on the ground of Boats being overloaded, and that no fines had ever been imposed on this class of cases, as undoubtedly there could not, there being no Law authorizing such fines. The want of such a Law was abundantly evident, and had long since been felt.

Mr. McFarlan stated, that he had so far interfered as to stick up boards to caution persons not to obstruct Ghauts; that he was not quite sure whether a Ghaut should not be considered as a publick passage, under the 2nd Section of the Calcutta Bye-Law of November 1814; but to allow a Boat to remain fast to it for four hours, negatived its usefulness: he adds "We never punish in such cases."

It appears that the Indian Law Commissioners addressed on the 19th of January 1838, a Letter to the Government in reply to Letters to them from Mr. Secretary Macnaghten, relative to certain Laws proposed by the Chief Magistrate of Calcutta, and other matters connected with the administration of Criminal Justice in this City, and the Vice-President in Council came, on the 7th of February 1838, to several Resolutions thereupon, whereof the 2nd stated, that His Honour in Council saw reason to believe that a Law for the Regulation of Ferry Boats plying between Calcutta and the opposite bank of the River, is necessary for the preservation of the community from the dangers to which they are exposed from insecure, ill-found, and over-crowded Boats; but that he thought it advisable that, before any Legislative steps were taken, the Committee of Municipal Improvements be consulted through the Government of Bengal, in regard both to

Appendix (K)
pages 116 to 120,
No. XXXIX. to
No. XLV.

Ibid.—page 121,
No. XLVI.

Pages 106 to 121,
No. XXXII. to
No. XLVI. inclu-
sive.

Addenda to Ap-
pendix (F) page
328, No. 107. (c)

Ibid.—page 330,
No. 107. (d)

Ibid.—page 322,
No. 107. (b)

Ibid.—page 333,
No. 107. (e)

the necessity of the proposed measures, and to the provisions of the Laws, which, if a Law be called for at all, ought to be enacted : and His Honour in Council also resolved, that the subject of the Law proposed by the Chief Magistrate to prevent the obstruction of publick Ghauts by Boats remaining a long time in front of them be also referred through the Government of Bengal to the Committee of Municipal Improvements.

Appendix to Appendix (F) page 324.

Ibid. — page 326.

Upon the question of these Laws, the Indian Law Commission in their Letter to the Government observe, that they have recommended in the Penal Code of Law, a Clause, which would make it penal universally to convey passengers in an unsafe Boat, whether the Boat be unsafe by being overloaded or otherwise. Your Committee cannot help being very humbly of opinion, that no such general Law would answer the purpose of a local enactment required for the Ferries of such a City as this, which ought to be drawn with due attention to the circumstances which require to be particularly provided against. With regard to the obstruction of Publick Ghauts, the Law Commissioners observe, in like manner, that this would be made punishable by the Penal Code ; and upon this your Committee beg to report the same observation, that general Laws are not sufficient for establishing particular Regulations of Police, required by the actual circumstances of a particular City.

Appendix (I) page 55, No. 35.

With these views your Committee will proceed humbly to offer to your Honour their suggestions relative to the provisions of the Laws, which in their opinion ought to be enacted.

The Chairman addressed a Letter to Mr. Patton Chief Magistrate, on the 12th of June 1845, in which he expressed his sorrow, that, very much through his negligence, and partly from his occupations, these two matters formed a part of those which still remained for your Committee to report upon ; and stated, that he was desirous of obtaining the Chief Magistrate's opinion upon the necessity of enactments, upon both or either of these subjects—Secondly, the grounds for that opinion—Thirdly, his opinion upon the sort of investigation which it would be right for your Committee to institute, in order to report upon these matters—Fourthly, whether any old Bye-Laws or Regulations existed, or any Law had been lately passed, regarding them—And lastly, any other observations upon the subject with which he might think fit to favour him.

Appendix (K) page 56, No. 36.

Ibid. — page 56

To this Letter the Chairman had the honour to receive Mr. Patton's answer, dated the 26th of June 1845, in which he stated, that he was decidedly of opinion that a legal enactment was both proper and necessary. His reason for entertaining this opinion was the frequent accidents which occur on the River, attended in many cases with extensive loss of life, from the overloaded state of Ferry Boats, and their being ill-provided with Boat gear, and the inefficient manner in which they are ordinarily manned ; but that the principal cause of those accidents was generally their being over-crowded.

He said the prevention of this seemed to him to be the primary object that demanded attention, and for this purpose it appeared necessary, that there should be particuar Ghauts fixed for Ferry Boats, and that these Boats should be numbered and registered, together with the names of the owners : that the capability of each Boat, as regards the number of men it is capable to hold with safety, should be carefully ascertained, and this number, as well as the registered number, should be painted in legible characters on some conspicuous part of the Boat.

In these suggestions your Committee cordially agree. With regard to the number of Ghauts, as well on the opposite side of the River as on the Calcutta side, to be fixed for Ferry Boats, the appointment of a suffi-

cient River Police for enforcing the Regulations, and the penalties to be imposed on those who violate them, your Committee will presently address themselves to these questions.

The Chief Magistrate stated, that he was not aware of the existence of any old Bye-Laws or Regulations, or any Laws passed since the date of the Resolution of the Government, that had reference to the matter in question.

With reference to the obstruction of Publick Ghauts, the Chief Magistrate was of opinion, that the proposed Law would be highly desirable, although it might be questionable whether the Government would consent to bear the expense that would be incidental to its efficient working. As regarded the Ferry Boats the Registry Fee, however small, would go to cover the expenses the carrying out of the Law would entail; but, as respected the proposed Law for the prevention of obstructions, there could be no income, and the State would have to bear all charge of establishment, &c. necessary to the purpose.

In this your Committee entirely concur; but they humbly think, that the increase in the River Police Establishment, necessary for the Regulation of the Ferries, would enable that establishment, with a very small further increase of their number, to effect the purpose of keeping the Ghauts free from obstruction; and that any expense that might be necessary for this purpose would become not worthy of consideration, when compared with the very necessary object of keeping free from obstructions so great a Harbour, which is frequented by so large a number of Ships, and Boats of such various descriptions, employed in the service of this great commercial City, for the promotion of its wealth, and the accommodation of its inhabitants. Your Committee are of opinion, that the questions, which have been proposed for their consideration regarding the Regulation of Ferry Boats, and preventing obstructions of Ghauts, are intimately connected with the more general question of maintaining an efficient River Police. The whole subject they think your Honour will agree with them in considering as one of the most important of the many important matters connected with the welfare and prosperity of this City.

But your Committee will first call your Honour's attention to the information they have obtained relating to the two subjects particularly referred to them. Mr. Patton having suggested, that the sort of investigation, which he thought it would be proper to institute in order to report upon these questions, should be the oral examination of those who frequent the River, and have opportunities of witnessing the accidents that frequently occur; and that such persons, he presumed, might be found in the Master Attendant's and Harbour Master's Departments, and among the Inspectors of Customs, and the better class of Preventive Officers; the Chairman addressed Letters accompanied with certain Queries, which will be found in the Appendix, to W. Bracken, Esq., Collector of Customs, to Captain T. E. Rogers, Master Attendant and Superintendent of Marine, to Captain E. Onslow, Harbour Master, to Captain W. Boothby, a Surveyor of Shipping, Captain E. Oakes, a Surveyor of Shipping, Captain G. W. S. Hicks, Superintendent of Police, Major F. W. Birch, one of H. M.'s Justices of the Peace, Rustomjee Cowasjee, Esq., one of the Members of your Committee, and E. Jenkins, Esq., Magistrate of Howrah, from whom respectively he received Answers to the Queries he had put. Your Committee were of opinion, that these answers were so full and satisfactory, that it was not necessary for them to pursue the matter further by oral examinations.

Mr. Bracken states, that personally he must confess entire ignorance and utter inability to offer any suggestions on the subject under considera-

Appendix (K)
page 76

Ibid

Ibid—page 76
No. XVI

Ibid.—No. XXII
Ib.—Nos. XXIII,
XIX, XIX, a,
Ibid.—No. XX
Ibid.—No. XXI
Ibid.—No. XXII
Ib.—No. XXIII
Ib.—No. XXIV
Ibid.—No. XXV
Ib.—No. XXVI

tion, but he had been glad to avail himself of the knowledge in this respect of an intelligent Officer attached to his Department, Mr. E. O'Brien, the Head Inspector of the Preventive Service, and whose situation also as Supervisor of Dhonies, had afforded him opportunities of acquiring information that might be depended upon: he accordingly enclosed that gentleman's Answers to the Queries put by the Chairman.

Appendix (K)
page 79, No.
XVII, a

His answers state, that there are only three Ferry Ghauts on this side of the River, and three corresponding Ghauts on the other side; that Boats are available at all times, from daylight in the morning to 10 o'clock at night, and sometimes later in fair weather; that the ordinary fare is half a pice for each individual, in open Ferry Boats that carry 40 to 50 persons each, and one pice in the Dinghies that carry from 20 to 25 men each. He says there is a Rule fixing the number to each Boat, but from want of an efficient check it has become a dead letter: that the open Ferry Boats registered to carry from 20 to 28 persons each, take on board from 40 to 50, and Dinghies registered to carry 10 to 12 persons, convey over 20 to 25—that the rule is seldom or ever observed; the Manjees take over as many as they can crowd into their respective Boats—that the Boats plying for hire are, generally speaking, ill-manned and otherwise ill-conditioned, but that on this head the opinion of a Nautical man would be valuable. He says that accidents frequently occur from the Boats being inconveniently crowded during the freshes, and when it is blowing hard—that he has frequently at such times seen the gunwales of the open Ferry Boats within half an inch of the water's edge—that loss of life from the want of stringent Regulations very often occurs. He says, that all Boats whether Ferry Boats or plying for hire to take parties to and from Ships, or from one part of the River to another, should be numbered and registered—that the present system, he speaks from personal observation, is of no use whatever. It would, in his opinion, be advantageous to have the names of the owner and Manjee, number of the Boat, and the number of persons it is licensed to carry, painted on a conspicuous part of the Boat. He says he can scarcely venture to offer an opinion as to what other Regulations it would be expedient to enforce by Law; but he suggests the taking security from the owners or Manjees of the Boats, or from both, and the punishing by fine any infraction of the Law. He says, that the Ferry Ghauts he had already mentioned as the only ones, to wit Neemtollah, Armenian, and Colvin's Ghaut, on this side of the River, and the corresponding Ghauts, Sulkea, Howrah, and Ramkistopore Ghauts, on the other side, are decidedly most convenient for the publick, and that there do not appear to be any restrictions necessary as to time except during spring flood-tides and the height of the freshes. In regard to the obstructions of the Ghauts he is not aware that there is any danger to be apprehended from the crowded state of the Ghauts, but that there is very great inconvenience occasioned by their being blocked up by Steamers, Accommodation and Cargo Boats, as well as by Natives bathing at them. To obviate these he thinks it would be necessary to establish the following or some similar restrictions.

First,—Certain Ghauts to be set apart for the Natives to perform their ablutions at.

Second,—Other Ghauts for Boats to load and unload at.

Third,—Other Ghauts for Boats to ply at for hire.

Fourth,—To prevent Steamers, Accommodation Boats, &c. from making fast to the shore by chains or warps, also to make Boats lie between, and not at the Ghauts, whether laden or empty, and to leave a clear passage for Boats of all descriptions to pass up and down between the Ships in the moorings

and the shore, and also from Burra Bazar Ghaut and Hautkhollah Ghaut to keep a clear passage.

He says, it is absolutely necessary that something should be done to keep this part of the River from being blocked up, as it is at present, by Up-country traders' Boats and Cargo Boats of all sizes and descriptions.

In regard to the Ghauts on this side of the River, from which the Ferry Boats regularly ply, Capt. Onslow differs a little from Mr. O'Brien's account, stating that these Ferry Boats regularly ply from all the Ghauts, except 7 or 8, which he mentions: he agrees as to there being a proper fare, from half a pice to one pice, but states it to be according to the state of the weather: he concurs in saying that there is a Custom or Regulation in regard to the number of persons admitted into the Boats, but very badly arranged; the regulation number being far too many in a tide-way; never stringently enforced, and now become a dead letter; that the Regulations commenced at Howrah; that the whole of the Boats belong to the Howrah side; that no licenses are given; and that there are no Regulations for this side of the River. He approves of the numbering and registering of the Boats allowed to ply as publick Ferry Boats. He is of opinion, that no Regulation can be made as to what number of Ghauts, and at what stations, ought to be fixed for the departure of Ferry Boats on the Calcutta side, or on the other side for their return, it being necessary for the Boatmen to accommodate themselves in this respect to the tide. He is of opinion, that there is more roguery committed, and more lives and property lost in proportion in the Boats plying from the Ghauts below Howrah Ghaut on that side of the River, than at the other Ghauts, owing to the fact of their being more out of the reach of the Howrah Police. Consequently the Boats are more overloaded; and frequently, he has no doubt, capsized for the sake of plunder. He concludes by observing, that no Law can be effectively carried out to remedy the many evils enumerated in the above Questions and Answers, without a good and efficient River Police, with a good, active, responsible person, as Registrar of Boats and Superintendent of that Police.

Appendix (K.),
page 84, No. XX.

With regard to the obstructions of publick Ghauts, Captain Onslow says, that there is much inconvenience.

Capt. Clapperton, Capt. Boothby, Capt. Oakes, and Capt. Hicks, say that there are in truth no fixed Ghauts on either side of the River, from or to which these Ferry Boats ply, nor any fixed fares—that these Boats cross at all hours of the day, and in the fruit season nearly all night, and extort all they can get from the passengers; the proper fare being from half a pice to one pice, according to the state of the weather—that passages in such Boats can be obtained for half a pice or less in proportion to the ability of the passengers to pay, and that very poor people are taken gratis—that the Manjee leaves the Ghaut when he has obtained what he considers a sufficient sum to repay him for the trouble.

Ibid.—No XIX., a.
Ibid.—No. XXI.
Ibid.—No. XXII.
Ibid.—No. XXIII.

It appears from this account, that the owners and proprietors of these Ferry Boats are not subject to the jurisdiction of the Calcutta Police, except when they themselves or their Boats are on the River, or at a Calcutta Ghaut, and that the very proper and useful Regulations, said to have been made with reference to Howrah, have long ceased to be carried into effectual execution.

Captain Onslow agrees with Mr. O'Brien as to the condition of the Boats, and states that they are insufficient and deficient in all points, and that accidents frequently occur attended with loss of life and property to a considerable amount of both.

Ibid.—page 84,
No. XX.

Appendix (K)
page 82, No. XIX,
a.

Captain Clapperton says, that they are very inferior to the Gardwarry or Ferry Boats employed on the Ganges, and that many accidents occur from their being overloaded in rough weather and unskilful management, and that he has witnessed a small Boat, without a house choppah, conveying 30 or 40 passengers with only a single oar to propel her, besides the steersman's scull or steering oar.

Ibid.—page 89,
No. XXIII.

Captain Hicks reports, that the Boats generally used are by no means good or sufficient, and are invariably ill-appointed both in tackle and hands.

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XXI

Captain Boothby differs from the account given by the other gentlemen, who have returned Answers to the Queries put with regard to the condition of these Boats. He says that generally they are good, and also well-manned, and *when properly laden*, he considers quite safe; *but that very few arrive at or leave the Ghaut in that condition.* It follows, that he also must think very few of them safe.

Capt. Boothby says, that he knows from actual observation that not only much property, but many lives are lost every month from the want of Regulations, and people to enforce them. He says, that these losses occur by the upsetting of Boats from their being overloaded—that a very short time past he saved upwards of a dozen of people of both sexes who had escaped from a Boat that had sunk, and one of the people he questioned told, that the Boat was marked to carry 25 people, but that he had counted 36, and that the Manjee had been heard to say he had received fares for 42. It was supposed eight lives were lost in this Boat. He also says, that it was only three mornings since, whilst passing Colvin's Ghaut, he saw a Boat capsized by merely grazing over a vessel's cable. Now this Boat had not only a full complement of passengers, but was also laden with baskets of vegetables to a great height, and so deep was the Boat, that there were not more than two inches of gunwale out of water. Fortunately the accident happened close in shore, otherwise he thinks it likely many lives would have been lost.

Ibid.—pages 84,
87, 89, Nos. XX,
XXII, XXIII.

Capt. Onslow, Captain Oakes, and Capt. Hicks, are aware that accidents frequently occur from Boats being overloaded, by which great loss of life and property is frequently sustained, and that the frequency of these accidents may doubtless be attributed to the want of proper Regulations, which are very much required.

All the gentlemen who have answered the Queries, concur in the advantage that would result from a Regulation that the Boats allowed to ply as publick Ferry Boats, should be numbered and registered, and the name of the owner registered, and that these, together with the number of persons the Boat is licensed to carry, should be painted in legible characters on some conspicuous part of the Boat. It is generally recommended that the name of the Manjee also should be painted on the Boat. This perhaps might be attended with some difficulty and inconvenience, if the Manjee were the servant merely of the owner of the Boat. But it appears from Major Birch's account, that the Manjee is truly the hirer of the Boat, and as such its responsible manager.

Ibid.—page 83,
No. XIX, a.

Captain Clapperton considers that a registry of *all* Boats employed upon the River is urgently required, and that the Boats should be numbered and registered with the names of the owner and Manjee, the number of oars or Dandees, its burden in maunds, with the number of passengers it is allowed to carry;—the owner should give security to a certain amount before a license is granted to him, for which a corresponding fee might be charged to meet the expenses of a registry establishment—the number of

the registry, with the weight in maunds, should be marked on the quarter of the Boat, and on the Ferry Boats the number of people they are licensed to carry—that the name of the owner and name of the Manjee should also be marked on the quarter of the Boat.

This Act he considers should include all descriptions of Boats plying off town for hire; for if applied only to Ferry Boats it would easily be evaded.

Capt. Boothby adds upon this subject, that if each Boat was marked with a paint line, how deep she could be loaded, much further mischief would be prevented—that the custom at present is for these Boats to get all the cargo they can, and then take their accustomed number of passengers, throwing out cheaper fare as an inducement. If a load-mark was given to each Boat, this could not be done. To the same purpose Capt. Oakes says, I consider it absolutely requisite that all Cargo Boats, Ferry Boats, Dinghies, and every description of Publick Boats, should be licensed, registered, and numbered in a very conspicuous manner on each side, both in English and Native characters, as also the number of persons they are allowed to carry, and the Ghaut they are allowed to ply from.

Appendix (K)
page 80.

Ibid.—page 87.

Capt. Boothby recommends as the only way of reforming the present system the establishing a regular Code of Rules, and the fixing upon particular Ghauts from which alone they would be allowed to ply, and at those Ghauts having an establishment purposely to *enforce* the Regulation. Capt Oakes believes, that nothing less than the employment of a respectable European Superintendent, and Peons under him, on the banks of the River, would have the desired effect, and this person should have an office and residence on the Strand, where parties could make their complaint either by day or night.

Ibid.—page 86

Ibid.—page 88

Major Birch says, that he has all along urged the expediency of registering and numbering *all* Boats that ply upon the River, whether Ferry or Cargo Boats, and he thinks the name of the Manjee (not owner, as these Boats are all let out to Manjees and crews), together with its number and legal complement of passengers should be painted on some conspicuous part.

Ibid.—page 97,
No. XXVIII.

Mr. Jenkins concurs in the expediency of having Boats of every description that are permitted to carry for hire, duly registered and numbered, with the name of the owner, and in passage Boats the number of passengers it is permitted to carry; and he says he has adopted this custom [in regard to the Ferry Boats] as far as it is in his power.

In his answer to the 5th Query, Major Birch draws a most lamentable, but it is to be feared not untrue picture of the apathy shown here in regard to rendering assistance by the crews of other Boats to Boats in distress, in order to save the lives and property of those on board, and he proposes the enforcing some penalty on the crews of such Boats as refuse or neglect to render assistance to others in a state of peril. Your Committee think that the attempting to enforce such penalties would be found very difficult and inefficacious, and they would rather suggest the offering of suitable rewards to such as by their exertions should be the means of saving life or property.

Ibid.—page 97

Major Birch concurs in the great inconvenience and cause of complaint arising from the crowding of Boats with cargo, and passage Boats, at the Ghauts, and recommends the allotting certain Ghauts for passage Boats, where Cargo Boats should not be allowed to put to, and certain other Ghauts for Cargo Boats, where the publick might be allowed to land, putting up with the inconvenience of detention; and he designates the

Ghauts he would appropriate to these purposes. He particularizes several Regulations which merit attention.

He says that complaints are frequently made, and that the cause much oftener occurs without any complaint being made, of the behaviour of the Boatmen in *forcing* passengers on board their Boats, of course only in the case of women, and the weaker of their own sex. But he believes that many a poor fellow, who has been reported to have accidentally fallen overboard from a Dinghy on his passage to his Ship, has been forced while in a state of helpless intoxication on board a Boat, and then robbed and murdered by being thrown overboard and drowned. He thinks effective Ghaut supervision, with the numbering of all Boats, would put a stop to this forcing system, and save many a valuable life. If a person of the experience of Major Birch can believe in the existence of such frightful atrocities, it seems high time that a sufficient River Police should be established.

Major Birch says, that the plundering of Cargo in transit has all along been very great—but he has considered the merchant alone to be blamed. Your Committee agree that great blame is imputable to the merchant, for entrusting valuable property to such persons as are mentioned by Major Birch, or, upon occasion of shipping goods, or landing them from shipping in the River, which have fallen under the observation of some of the Members of your Committee, to persons as incapable of carefully discharging the duty, and perhaps less trust-worthy. But this surely does not exempt the Government from the duty of giving to the transit of goods, in so large and important a Harbour, all the security which can be afforded by an active and vigilant Police, acting under efficient and carefully considered Regulations established by Law.

In regard to the number of Ghauts, and at what Stations, which ought to be fixed for the departure of such Ferry Boats from the Calcutta side, and at what times of the tide, and the number of Ghauts and Stations on the other side, which ought to be fixed, and at what times of the tide, there is some difference of opinion. We have already seen that Mr. O'Brien thinks, that the three Ghauts on each side, which he has mentioned, are most convenient for the publick, and that there do not appear any restrictions necessary as to time, except during spring flood-tides, and the height of the freshes. Capt. Onslow is of opinion, that no Regulation can be made on this point but that the Boatmen must accommodate themselves to the tide.

Captain Boothby considers four Ghauts on each side of the River would be ample for all purposes of traffick between Baboo's Ghaut and Nimtollah, and two at Cooly Bazar; and it would also prevent much confusion, and he thinks theft, if they were only allowed to leave this side at fixed times, say every hour between 5 A. M. and 7 P. M., after which nothing but regular Dinghies ought to be allowed to pass—he does not think it would be advisable to tie them down to any particular time of tide—only let the Boats be properly loaded, and there is no danger to be feared, more especially if the shipping were moored so as to leave a clear space opposite each Ghaut. He says that much nefarious traffick is carried on through these Ferry Boats being allowed to pass free from enquiry at all hours, and he knows from experience that large quantities of opium, bang, and salt, and other articles are smuggled into Calcutta through these channels.

Captain Oakes is of opinion, that the Ghauts fixed upon for regular Ferry Ghauts should be as clear as possible from the shipping at the moorings, to prevent accidents which frequently occur amongst the buoys, and

Appendix (h.)
page 81

Ibid. —page 84.

Ibid. —page 85.

Ibid. —page 88.

that the time of departure of the Boats may be regulated by the Superintendent, as they now ply at all times of the tide. The number of Ferry Ghauts at present in use on the other side of the water he believes to be sufficient; these are Goolabarree, or what is termed Sulkea Ghaut, Howrah, Goladangah, and that at Seebpore.

Captain Hicks says, that the four Ghauts named in his reply to the first query ought to be fixed for the departure of Ferry Boats on the Calcutta side, and Boats might with safety be suffered to start at all times except when the bore is expected to set in, and on these occasions they ought not to be permitted to quit within one hour of its appearance. He says, that the four Ghauts used on the other side will, he believes, answer every reasonable purpose, and he names them Sulkea, Goolabarree, Howrah and Ramkistopore.

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In regard to the obstructions at the publick Ghauts Captain Onslow differs very materially from Mr. O'Brien, as to the danger arising from this cause. He says that there is much inconvenience and danger, amounting to the destruction of life and property, arising from the obstructions at these Ghauts, and these obstructions have greatly increased at the principal Ghauts since a recent order prohibiting Budgerows and Beaulahs lying off the Esplanade, as well as from the publick Ferry Boats and private Dinghies at these and all other Ghauts. These obstructions and inconveniences may be obviated by many measures, and he mentions some, which he himself had suggested, and which will be found in his evidence.

Ibid.—page 58.

Captain Clapperton says, with regard to preventing obstructions at publick Ghauts, that, independent of the destruction of pukka Ghauts by allowing Boats to lie upon them when the tide is high, much inconvenience and damage to publick and private Boats occurs by the evil practice of blocking up the Ghauts. It seems to him therefore highly expedient, that all pukka Ghauts extending into the River, and intended to facilitate the landing of passengers should be marked off by strong posts running out to low-water mark, within which line of demarcation no Dinghies or other passenger Boats should be allowed to remain but for the purpose of landing and embarking passengers.*

Ibid.—page 83.

Captain Boothby says, that the amount of inconvenience occasioned by the indiscriminate use of the Ghauts of Calcutta is beyond conception, and in no part of the world have the dishonest so great facilities of carrying on their various practices afloat. He thinks that a Code of Laws could easily be framed, which, if honestly carried out, would effectually correct these manifold evils. He thinks much could be done by having rules laid down for the Regulation of Bhurs, Dinghies, Passage Boats, and Beaulahs, fixing the Ghauts at which alone they will be allowed to lie, and the times at which they will be allowed to traverse; having passes if requisite for extra hours. He says that the inconvenience to passengers by the indiscriminate use of the Ghauts is actually very great; but he does not think there is much danger or loss of life caused by it, and he considers all would be avoided if each class of Boats had Ghauts allotted to them for their particular use.

Ibid.—page 87.

Captain Oakes says, that the greatest obstruction in his opinion proceeds from Cargo and large Up-country Boats. These, when not employed, are moored in great numbers between the shore and the inner mooring buoys, from the Custom House to the Armenian Ghaut, so as to completely block up the passage, and cause all Boats on their way up and down the River to proceed outside the shipping and buoys, which sometimes is totally impossible from the strength of the tide, and exceedingly dangerous

Ibid.—page 88.

to attempt. The larger Boats when not engaged, should be moored two abreast in a line above the Armenian Ghaut at a sufficient distance from the shore, to allow of a passage inside them. The Up-country Boats should land their cargoes above the shipping Ghauts. They are large unwieldy Boats, and not easily managed among ships and buoys in a strong tide-way.

Another great obstacle he says is caused by Boats of all descriptions lying at the Ghauts for hours together, blocking up the passage entirely, and preventing persons from landing without going over them. The whole of the banks of the River on the Calcutta side, from Chandpaul Ghaut to the New Mint, should be appropriated to the landing of goods, loading of Boats, and the embarking of passengers; the great inconvenience now experienced arising from the River frontage being occupied by private individuals. He concludes by saying, that for the last eight or ten years he has been in the daily habit of landing and embarking from either the Armenian or Bebee Ross' Ghauts, which he says nearly join each other, and has very frequently been obstructed by the wrecks of Boats, spars, old guns, iron kentledge, broken anchors, etc., thrown out of Boats at any time of tide, and allowed to remain for days and weeks together, according to circumstances. Boats coming to the Ghauts at night are often bilged by these obstructions; indeed a look at Bebee Ross' Ghaut at the present time would satisfy any one how needfully regulations are required on the banks of the River.

Major Birch, and Mr. Jenkins, agree that there are not,—Major Birch says there never were—any Regulations regarding the number of persons to be admitted into the Ferry Boats with reference to their size.

Mr. Jenkins says, he has made a Rule for the last 3 months upon this subject of his own authority, which, if it be in the power of a Magistrate in the Mofussil to make Laws of this nature, must be considered a great improvement so far as regards passengers coming from Howrah to Calcutta; but no such Rule can at any rate apply to those going from Calcutta to Howrah, who amount to an equal number. Mr. Jenkins states, that he was induced to make this Rule by the frequent complaints made to him by passengers that the Boats they crossed in had been so loaded as to render them dangerous. He says, that Boats above 50 maunds are required to have 3 Boatmen and one Manjee. But he finds the Rule little attended to. He does not say by what authority the Rule is prescribed.

Major Birch thinks the Boats very well suited for the purpose, and sufficiently manned for the ordinary passage across, that is, carrying only their proper complement of passengers, but not when crowded with passengers, and at the season of the freshes and bores. He says they are then very unsafe. They never have more than three hands, oftener only two. Practically, therefore, they must be considered, in Major Birch's opinion, very dangerous Boats.

Mr. Jenkins states, that these Boats are in general but badly built, without any regard to their being sea-worthy; that they are built for hire with little care in the construction of them, and their having the requisite number of hands is little attended to. The jurisdiction of the River being under the Chief Magistrate of Calcutta, he has no data respecting the loss of life and property, but is aware there are many accidents, particularly during the rainy season.

With regard to the loss of life and property from the want of judicious Regulations properly enforced, there is but one opinion, that this loss is very frequent and of great amount.

Appendix (K)
pages Nos.
XXV 111. and
XXX.

Ibid.—page 101.

Ibid.—page 96.

Ibid.—page 101.

Major Birch states, that accidents used frequently to occur, (meaning when the River Police was under his Superintendence) with loss of life he believes to a considerable amount, but particulars of the actual loss of life could seldom or ever be obtained; that if the Boatmen escaped with their lives they absconded for a time.

Appendix (K)
page 97.

Major Birch reports, that during the year 1837, he took a census of the population of the City of Calcutta, and of the number of individuals entering and leaving the boundaries within the 24 hours. Those entering and leaving by the western or River side, amounted to either 12,000 or 16,000, but he is unable to speak positively as to which amount, no copy of these Reports, he regrets to say, being now to be found in the Chief Magistrate's Office, the originals having been sent in, and no copies kept.

Mr. Jenkins reports, that from what information he could collect respecting the probable number of persons residing in Howrah, who daily find employment in Calcutta, the following average may be depended upon as nearly correct.

Ibid.—page 102.

Writers and persons engaged in different offices, ...	...	1,000
Coolies, workmen, women, etc., ...	...	2,000

Total, ... 3,000

He has also furnished your Committee with a statement, showing the number of persons, and also the traffick, which passed daily between Howrah and Calcutta on three days, from and to the two larger and more frequented of the Howrah Ghauts, and on two of the said days from and to the two less frequented Ghauts. The daily average number of persons crossing at the four Ghauts together was above 20,000. The number of Boats of all sizes, registered in the office of the Magistrate of Howrah, for the ferrying across this large number of persons, is 324. It appears that on each of these Boats the number of the Boat, and the number of passengers it is permitted to carry, are painted in legible Bengalee characters on the sides of the Boat.

It appears that these very creditable Regulations by no means answer the purpose of securing the sufficiency of the Boats, either in regard to their being well built, and sea-worthy, or their being properly manned, or free from the danger of being over-crowded with passengers. It appears that there are no sufficient means of enforcing these admirably meant Regulations at Howrah; and at Calcutta no such Regulations exist, or can exist without a publick Law.

It may well be that the number of passengers has increased greatly since Major Birch's census. The extent and population of Calcutta have increased greatly since 1837, when it is probable Major Birch's census showed the amount at 16,000, the whole number of persons daily entering and leaving Calcutta, being returned by that census at 175,000, in 1837. There seems no reason, therefore, to doubt the probable approximate average returned by Mr. Jenkins. So that the number of persons, who *must* cross and re-cross daily, is 3,000, and of those who actually do cross and re-cross daily, is upon the average 10,000, the safety of whose lives depends upon the Ferry Boats being placed under good Regulations, and efficient supervision. Mr. Rustomjee Cowasjee concurs with the other gentlemen examined in saying, that there are no fixed Ghauts from which passage Boats ply but that they ply according to the state of the tide; that there are no fixed times at which passage Boats can be obtained or fixed customary fares—that during the time when the labourers come from Howrah and return to

Ibid.—page 98, No
XXV III.

Appendix (K)
page 99, No.
XXIX.

it, the Boats are very generally most fearfully and dangerously crowded; that the fares vary from $\frac{1}{4}$ to $\frac{1}{8}$ of an anna, and this in the same Boat—the men being governed more by the number of applicants than any fixed rule: that no interference is ever offered to [prevent] their cramming their Boats to a sinking state; that the Boats are very slightly built, and the men very inefficient, while the crowded state of the Boat often renders it difficult to avoid danger, and utterly impossible to extricate her when once in a dangerous position; that from the want of Regulations upon the above subjects, accidents frequently occur attended with loss of life and property, he imagines, to a considerable extent. He agrees, that the Ferry Boats should be numbered and registered, and that the name of the owner, together with the number of passengers it is permitted to carry, should be painted in legible characters on some conspicuous part of the Boat, and that it should be provided that heavy fines be stringently enforced—that the Boats should be classed, and a fixed rate of hire established—that both Boats and men should be examined as to their efficiency every month. He adds several valuable suggestions of necessary Regulations both in regard to the Boats and the Ghauts. He says, that there can be no doubt that an extensive system of plundering exists both as to merchandise, in shipping, and landing cargo, and as to goods in transit. He is not aware that this is frequently or ever attended with murder or personal violence, but believes that suspicions of personal violence to seamen and others of a night have recently been brought to the notice of the authorities.

In answer to some further inquiries which the Chairman took the liberty of putting to Captain Hicks, he had the honour to receive from that gentleman a Letter under date the 31st of July 1847.

Appendix (K)
page 105. No
XXXI. a.
Ibid.

Captain Hicks is averse to the Superintendence of the River Police being committed to a separate officer. He says, that the River Police has had quite as much of his attention as any other portion of the Police, and that it does not occur to him that its supervision and arrangement have ever been so irksome and laborious under the present new system and arrangement, as to suggest the necessity of its being placed under separate control. He says, it is not difficult to suppose that under the old plan this might have been otherwise, but that now the River Police Department derives very great assistance from the Town Police, and that a separation would, he thinks, render the duties more complicated and laborious, for which he offers reasons which, without doubt, have much of truth to recommend them, but which do not appear, in the humble opinion of your Committee, to over-balance the considerations arising from the great extent of space placed under the superintendence of one Chief Police Officer—from the great number of persons engaged in depredations widely scattered over the whole of this space, more particularly upon the River, and at all hours of the day and night—from daylight affording upon the River but small protection from robbery and violence; and the great difference in the means of energy necessary to secure the safety of the River and Harbour, and those called for to preserve the peace of the city.

Your Committee are persuaded that no one man, whatever may be his qualities as Police Officer, can duly discharge the duties of both.

Capt. Hicks gives to your Committee the comfortable assurance, that since February 1846, not a single River robbery has taken place, nor has an occurrence of the sort been reported at the Police Office. Capt Hicks applies the observation generally to “gang robberies and thefts.”

Your Committee have much pleasure in believing that with respect to gang robberies these are much less frequent than they were some few years

ago, and they think this extremely creditable to the Magistrates and the Police; but they cannot think that no occurrence of the sort having been reported at the Police Office is conclusive evidence that not a single River Robbery has taken place, and with regard to thefts your Committee have no reason to believe that these are confined to petty thefts, but extend, as the records of the Supreme Court will show, to considerable depredations committed on valuable merchandise. Capt. Hicks agrees with Major Birch in throwing upon the mercantile community the blame of the frequency of these thefts.

In attributing much blame upon this head to the merchants, your Committee must again repeat, that their being in part to blame for the amount of theft committed upon their cargoes, in their transit between the Ships and the Ghaut, can by no means exempt the Government from giving to that transit all the security, which can be afforded by a vigilant Police, and efficient regulations established by Law.

Capt. Hicks is of opinion, that it would be advisable to place the Ghauts and Ferry Boats under proper management; and he thinks when proper Laws and Regulations shall have been passed, committing that management to the River Police, they could easily be carried into effect by increasing the establishment. He thinks the obstructed and filthy state of the Ghauts and the many accidents and deaths which happen from the use of Boats not adapted for Ferry Boats, as well as the crowded state in which they ply to and fro, render the suggestion of measures of improvement worthy of the most serious attention. He regrets the not having been able to procure an approximate estimate of persons who reside in Howrah, but gain their livelihood in Calcutta, the various estimates given him by the different Manjees differing so widely, that he could not offer them as a guide. At one Ghaut the largest, (Meerbhur) it is calculated that about 250 people, residents of Howrah, cross and recross daily.

Appendix (K)
page 106.

Your Committee think it sufficiently proved by the above evidence, that nothing can be supposed more lamentably defective than the provisions in force for the security of life and property in this great Harbour. It clearly appears, that there are no fixed Ghauts on this side of the River, from which publick Ferry Boats ply for the purpose of taking passengers across, nor any fixed times or fares established by Law or by Custom, at which passages may be obtained; but that Boats of various dimensions ply at all times from all the numerous Ghauts on this side, waiting for an indefinite time, to the great detention of many of the passengers, till they have obtained a sufficient, or usually more than sufficient, number of passengers for their remuneration; nor is there any Regulation in regard to the sufficiency and sea-worthiness of the Boats—their being sufficiently manned—or the number of persons who may be admitted into such Boats with reference to their size—on all which the safety of the lives of so many persons in daily transit depends.

It should seem that, on the other side, the places from which these Boats depart for Calcutta are more certain, being only four in number; but in all other respects the want of power to enforce regulations to ensure convenience and safety is the same. With regard to the sufficiency, and good appointment in tackle and hands, of Boats which ply as Ferry Boats, all the gentlemen, except Captain Boothby and Captain Oakes, and perhaps Major Birch agree in considering these Boats as generally insufficient, and ill found in tackle and hands. The gentlemen who say that the Boats are generally good, and well-manned, and when properly laden quite safe, agree

that they are so only when not over-crowded with passengers, which seldom happens, and when there are no bores or freshes in the River.

Upon the whole, it humbly appears to your Committee, that the Government is called upon, by every consideration of publick policy and humanity, to propose to the Legislative Council an enactment, which shall provide for the due regulation, not only of these Ferry Boats, but, from the information obtained by your Committee of the inconvenience and dangers caused, and the means of depredation and smuggling afforded, by the want of Regulations regarding them, of all other Boats plying in the Harbour for hire, whether for the conveyance of goods and passengers to and from the shipping, or for other purposes, and above all things the establishment of a good and effectual River Police.

With regard to Boats plying in the River forming the Harbour of Calcutta, for other purposes than that of ferrying passengers across, your Committee at a very early period of their proceedings obtained a copy of the Superintendent of Police's Report, then Captain Birch, to the Governour General, respecting the River Police, dated the 29th of September 1836, and printed at page 56 of the Appendix to Appendix C. to their First Report; to which they beg, in connection with the subject now in hand, and in particular with the answers returned by that gentleman to the queries now put to him, again to call the attention of the Government.

To this subject, your Committee in their First Report adverted very shortly.

They recommended that the jurisdiction of the Stipendiary Magistrates which then included cases occurring upon the River, [i. e. within the Harbour] should be extended over both banks of the River, and that the Superintendent of Police, (whose duties have always extended over the River and Harbour, as well as the landward part of Calcutta,) being relieved of the duty of the Collection of Assessment, be required to devote the whole of his time and attention to the executive duties of the Land and River Police and the collection of the Abkarree Tax. Your Committee also recommended, that an efficient River Police Establishment should be placed under the supervision of the Superintendent of Police, under the immediate charge of two or three European Constables: the present Establishment of River Police being, as they stated, very inadequate to prevent the plunder of property in transit to and from the ships, not to mention the other purposes to which that Police ought to be applied.

Your Committee are informed, that part of these recommendations have been adopted; but the records of the Supreme Court show, that they have not succeeded in putting down these offences, of which complaints continue to be made, but attended with great difficulties in the detection of the offenders.

Capt. Birch, in the paper above referred to, mentions the various stages in which goods are exposed to plunder, in their transit between the shipping and the wharfs, and many of the means by which that plunder is effected. He recommends that a registry should be made of all descriptions of Boats plying on the River Hoogly within the Jurisdiction of Calcutta, and that all the provisions of 2nd Geo. III. Chap. 28, should be adopted, and made applicable to the Hoogly River Craft; which, he says, would tend greatly to the suppression of the pillage which now exists.

Your Committee agree with Captain Birch in this recommendation, to the extent of taking 2. Geo. III. c. 28 as a model to be adopted for an Act to be passed by the local Legislature, with such curtailments and adapta-

First Report, Appendix to Appendix (C) page 6.

Pages 157 and 180.

tions as may be necessary to render it suitable to the circumstances of this Harbour, and River; and in this Act should be inserted a clause empowering the Government to purchase all such Lands and Ghauts on the Banks of the River, as they shall deem necessary for the purpose of improving the Harbour, and the ferries, the compensation to proprietors, in case of dispute, to be assessed by a Jury.

Capt. Birch then goes on to consider the amount of the Police Establishment adequate to the duties to be performed. He recommends the Superintendent of the Calcutta Police, under the general control of the Chief Magistrate, to be charged with the general supervision of the increased establishment, but to be vested with sufficient authority to deal with River offences.

Upon this subject the late Mr. C. K. Robison, one of the Magistrates, said in answer to a question by your Committee, that he had stated to the Police Committee of 1829, and was still strongly impressed with the belief, that it would be a great convenience to have a separate Magistrate for the shipping, with Jurisdiction on both sides of the River; and he thought that the River Magistrate should have extended summary power, and have a separate office near the River, and be always in attendance. He was of this opinion from a knowledge of the great loss sustained by owners and masters of ships, from any delay in the decision of their cases, leading to the abandonment of prosecution, and consequent escape of the most determined offenders. He adds, that all Lighters and Bhurs should be registered and numbered. He says the River Police has, in his opinion, been always neglected, and that a separate Magistrate ought to devote his whole time to it. He adds that the loss from plundering is very great.

Appendix (C)
page cxiii.

On the 14th of March 1837 the Rajah Radah Kant Deb addressed a Letter to the Secretary to one Division of your Committee, in which, along with his several Answers to the Queries enclosed in the Secretary's Letter to him, he enclosed a copy of his, the Rajah's, Letter to Mr. McFarlan, then Chief Magistrate, containing his opinion on the general state of the Town and Police; in which Letter he complains much of the Bombetias, or River Pirates, frequently committing depredations upon the Ganges [Hoogly]; and says that this was imputable to the utter inefficiency of the existing Guard Boat Establishment. He also complains that the Ferry Boats are totally neglected, from want of due attention in the Police Officers—that the Ferrymen neither keep large or secure Boats, nor employ proper Boatmen, or Manjees and Dandeers, and overload their Boats with people or passengers, for their own interest, whereby the Ferry Boats are always liable to oversetting and sinking in the River, causing in every blowing season a shocking destruction of human lives. He says, he therefore deems it requisite to suggest that the necessary orders should be issued to employ regular Ferry Boats, and Ferrymen properly trained to their business, and to number and register the Boats, together with the name of the regular Ferrymen or Manjees, in the Police, as well as to fix the number of persons to be taken in each Ferry Boat, with a penalty on deviation from the rule. By so doing the lives of many poor individuals will be saved.

Appendix (F)
pages 20 and 23.

He complains much of the Dinghywallahs as a great nuisance to people desirous of crossing the River; insisting upon people getting into their Boats, and pulling and pushing and actually committing assaults on the persons resorting to the River side. They should, he says, also be registered, and the Dinghies numbered.

It appears, that an order was issued so far back as the 29th of June 1824, by the Magistrates to the Superintendent of the Strand Road, to prevent pins or posts being driven into the banks for the purpose of fastening Boats, and not to allow persons to cook on the bank, or to commit any nuisance upon it, and on the 4th of July 1831 an order was issued to the Overseer of the said Road, to cause Boats touching at the Ghauts, immediately to retire and leave the whole breadth free for the access of new Boats, which were to retire in turn to some other part of the bank.

It does not appear that these orders have ever been enforced.

It is certain, therefore, that the dangers and inconveniences caused upon the River, and in the Harbour, have been long known and complained of, obviously arising from the want of any regulations practically existing for their removal or prevention, and of a sufficient police establishment upon the river to enforce the provisions of the common law, and repress crime—a state of things which still exists; but for which adequate remedies ought without delay to be provided.

What the dangers and inconveniences requiring to be remedied are, appears sufficiently in detail upon the Evidence your Committee has laid before Your Honour, and your Committee would humbly recommend the appointment of a Commission, composed of some or all of the gentlemen they have examined, practical men acquainted with the nature of those dangers and inconveniences, in conjunction with the Magistrates, to point out in detail the Regulations they should concur in proposing, and the submitting to counsel these Regulations, together with the above mentioned Act of Geo. III. and the suggestion of your Committee to insert a clause empowering the Government to purchase Lands and Ghauts on the Banks of the River, directing the learned counsel from these materials to frame a suitable Act to be presented to the Legislative Council.

Your Committee having now finished their several Reports upon the various subjects specially referred to them, beg to resign the interesting appointment they have so long held. They are aware, that there are other subjects of importance, which, though not specially named, may be considered to be, as said at the close of their First Report, within the range of the reference to them, under the extended interpretation they have given to the words of that reference, and into which they would gladly have inquired, had the time, and the necessary occupations of some of their members, permitted.

The principal of these are suggested in that Report. Though far from unimportant, they are of inferior importance to the subjects they have carefully inquired into and reported upon, and your Committee must leave them, and perhaps other matters, if the Government shall desire them to be inquired into with a view to the remedies or improvements which they admit or require, to the future investigation of such new Committee as the Government may think fit to appoint to succeed your present one. The near approach of the Chairman's return to Britain will prevent his taking any share in such investigation.

They cannot bring their labours to a close without specially and unanimously bearing testimony to the important assistance they have uniformly received from the intelligent, zealous, active, and indefatigable services of their Clerk, Mr. James Morris, at a very moderate salary, without whose services so afforded the Chairman, upon whom, through the confidence reposed in him by your Committee, the preparation of their Reports, with the exception of that part of their first Report which was drawn by

the first Sub-Committee, has mainly devolved, could not have accomplished what he undertook.

Your Committee respectfully beg leave earnestly and unanimously to recommend this gentleman to the notice of the Government, in the hope that the Government will take his services into its favourable consideration.

COMMITTEE ROOM, TOWN HALL :
30th October, 1847.

(Signed) J. P. GRANT, *Chairman.*

„ F. PEMBLE STRONG, *Surgeon to Mysore Princes.*

„ RUSTOMJEE COWASJEE.

„ R. SCOTT THOMSON.

„ H. GOODWYN, *Major Engineers*

„ A. ROGERS.

„ J. H. PATTON.

„ W. P. GRANT.

„ PROSUNOCOOMAR TAGORE.

„ J. GRANT, *Senior Surgeon.*

POSTSCRIPT.—Your Committee since transmitting to your Honour their 2nd Report, have obtained several valuable papers connected with the subjects of that Report, which they have deemed it proper to print, and which will be found in the Appendix to their Report.

The importance of the Soondurbun Canals as a line of navigation, much more safe and convenient than the lower route by the Attarabanka, is stated in your Committee's 2nd Report, and the great necessity of keeping them perfectly navigable, and, together with their tow-paths, in an efficient state, may be seen from two of the above papers.

In a Letter to the Secretary to the Military Board, dated 8th November 1837, Capt. J. Thomson, the then Superintendent of Canals, states that the south-west monsoon has been very severe in the Soondurbuns, and the number of Boats wrecked in the Roymungul and the Attarabanka, has exceeded any former experience : the amount of the loss may have exceeded two lacs of Rupees in the months of May and June last, and the traffick by all large loaded Boats was stopt for a time. Some of the loaded Boats attempted to come through the Soondurbun Canals, but grounded and went to pieces in the Chultabarya Canal, not only obstructing it for a time, but deterring others from attempting this safer passage.

Appendix to Ap-
pendix (II.)

Ibid.—page No.
467.

Appendix to Appendix (II) page No. 514.

And in his Letter in the year following, dated 19th November 1838, Capt. Thomson states, that in May 1837, 400 *Boats of the average burthen of 800 maunds each*, were wrecked in the Attarabanka and Roymungul, valuing these Boats at 1-8 each maund, including cargoes of grain and seeds, the estimated loss was about 4,50,000; the natives estimated the loss at six lacs. He says he stated in his Report No. 109, of the 8th November 1837, that the loss was probably 2,00,000.

T H E E N D.

ADDENDA.

Extract—Proceedings of the Committee upon the Fever Hospital and Municipal Improvements, Tuesday, 9th November, 1847.

“The Members of the Municipal and Fever Hospital Committee cannot permit their respected and able Chairman, to depart from the sphere of his great usefulness, without recording their feeble estimate of the value of his all-important services in the cause of what has now so long occupied his and their attention, and which they have reason to hope, is approaching the point of realization and completion.

From the date of the appointment of the Committee to the present time, a period of twelve years, Sir J. P. Grant has freely devoted his time attention, abilities, and influence to the furtherance of its objects. His great practical skill and sagacity, have suggested the best and most efficient means of collecting information, which his rare powers of discrimination and analysis have reduced to order and rendered practically available.

If the health, comfort, and social advancement of a large community in a great metropolitan City are in any way dependent on its Drainage, Ventilation, and internal economy, and these are matters considered worthy of the attention of the philanthropist and the patriot, then is Sir J. P. Grant entitled to the gratitude of this community, as one of the most enlightened benefactors.

Fever and pestilence, that too often endanger or destroy life, especially among the poorer classes of the population, will be allayed or neutralised by the measures contemplated for securing an abundant supply of pure water and wholesome air to all, which a more efficient system of drainage as well as of domestic and intermural ventilation will bring to the door of the poorest hovel, whilst the architectural and other improvements of the City will tend to foster Native taste and talent now in the initiative of development by the rapid spread of education, and the arts that usually follow in its train.

In all these great and important objects, has Sir J. P. Grant long, unweariedly, and successfully laboured; his reward we trust, it is not too much to anticipate, will be the diminution of mortality, the increase of health and wealth, and the advance in civilization of the metropolis of British India.”

Appendix (A)

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PROCEEDINGS

OF THE

GOVERNOURS OF THE NATIVE HOSPITAL

RELATIVE TO

The Establishment

OF

A FEVER HOSPITAL

FOR THE

RELIEF OF NATIVES

TOGETHER

WITH NOTES RELATING TO THE STATE

OF

CALCUTTA AND ITS SUBURBS.

Printed by Order of the Governours.

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INTRODUCTION.

THE Governors of the Native Hospital, in soliciting the charitable aid of the Public to their present design of establishing a "*Fever Hospital*," wish to be distinctly understood as not intending in any way to encroach upon the constitution of the Native Hospital, but that the proposed Institution is to be essentially a separate one, both as regards its funds and the rules by which they are to be administered ; and that it is their intention, so soon as the requisite contributions shall have been realized, to call a Meeting of the Donors and Subscribers to the Fever Hospital, when all matters appertaining to the contemplated charity shall be finally adjusted. The Governors, however, [wish to impress thus early on the Native community especially, the necessity there exists for their effective support in aid of the proposed establishment ; for without that active co-operation and support on the part of the wealthier Native Gentlemen, the best endeavours of the Governors, even aided by the European community, must fall to the ground.

The chief object at present is to draw the attention of the public to the very deep importance of the subject brought before it,--to remind the Natives especially, that thousands of their poorer fellow countrymen in and about Calcutta are continually exposed to the ravages of the more prevalent diseases of the country, and in a very large proportion, *without a chance of being relieved* : they die in thousands, not from the original force of disease, but from the want of an asylum like that now proposed. .

The Governors feel assured that to the fact just stated, they need add nothing more to secure to them the active and liberal aid of all Native Gentlemen, residing, not only in Calcutta, but in the Lower Provinces generally.

*Proceedings of the Special Meeting of the Governors of the
Native Hospital, held 20th May, 1835.*

THE non-existence of any Institution, uniting the advantages of Medical advice and of attention to the personal comforts of the Native population of Calcutta and its Suburbs, labouring under Fever, Dysentery, and other disorders incident to this country,—the sufferings and the immense loss of human life consequent upon those diseases, increased to a fearful height from the want of an asylum of this nature near at hand, having been forcibly brought to the notice of the Governors of the Native Hospital, by the Surgeon of that Institution, the subject was by them deemed of so much importance that a Special Meeting of their body was convened upon the 20th instant, for its consideration, at which the following Gentlemen were present :—

The Right Revd. the Lord Bishop of Calcutta,
The Hon'ble Sir E. Ryan, Chief Justice,
The Hon'ble Sir J. P. Grant,
C. W. Smith, R. Saunders,
C. R. Barwell, T. C. Robertson, and
B. Harding, S. Nicolson, Esquires.

attended by Mr. Martin, Dr. A. R. Jackson, and Baboo Ramcomul Sein.

The Lord Bishop was voted into the Chair, when a printed report and some manuscript notes by Mr. Martin were laid before the meeting, along with corroborating letters from other practitioners of this City, and a series of practical observations by Baboo Ramcomul Sein. Mr. C. W. Smith then read the following remarks, and proposed the resolutions annexed to them, which, together with Mr. Martin's notes and the other letters and observations alluded to, having received full and deliberate attention at the time, are now appended for the information and consideration of the community at large, and in the fullest assurance that this attempt to add another most beneficial establishment to those which already distinguish this City, will be met with that liberality and benevolent feeling, which is so characteristic of the inhabitants of Calcutta, both European and Native.

MR. SMITH'S ADDRESS.

THE purpose for which we have called the present meeting of the Governors, is to consider a proposition submitted and recommended by Mr. J. R. Martin, to add a Fever Hospital to our already existing Establishments.

In the following remarks I shall briefly shew, that the proposition in question is consistent and compatible with the immediate object of this Institution, is in itself an object, the attainment of which will confer great and important benefits on the Native population, but that it is also one, which we cannot accomplish in a suitable manner, with reference to our funds, without having recourse, as in 1792, to an appeal, addressed to the community at large, in furtherance of it ; and I shall conclude by suggesting some resolutions which, with every deference to this meeting, I would propose for adoption.

It has been suggested, then, by Mr. Martin, in his valuable paper on this subject, that, with reference to our present establishments, we could not extend the benefits of this Institution, in a manner better suited to meet the exigencies of the Natives in this populous City, than by establishing a Fever Hospital in a central part of the Native Town.

It is the opinion of Mr. Martin, that such a Hospital is most urgently required, for the relief of the population, not only in times of unusual sickness, but even in ordinary seasons, and he gives it to us as the result of his personal enquiries and observation, that there is no other object in the nature of a public benefit which could be more useful or which could be more generally and gratefully acknowledged by the Natives.

In entertaining the present proposition, we are making use of our undoubted privilege as Governors.

We are vested with authority to appropriate the funds of the Institution in such manner as shall best secure the object of the Institution, which we learn from our Rules, is that of extending its benefits to persons requiring Medical advice and assistance.

We are therefore called upon to give our mature consideration to the proposition of a Fever Hospital, and to decide whether it is or is not such an object as, with reference to our rules and other contingencies, should be adopted by us.

As the sole object of this Institution is to extend the benefits of Medical advice and assistance to the community of this City, it is first necessary to enquire whether the establishment of a Fever Hospital embraces that object, and secondly, whether it is needed in addition to our present establishments, considered with reference to their local position, and extent to which their usefulness is circumscribed.

I believe it will be found that of all the catalogue of diseases in this fruitful clime, common Fever greatly out-numbers the whole put together, and is in itself the immediate cause, when neglected, of many others. I here speak under correction, but if I have approached the truth, little more need be said, tending to shew that the extension of Medical aid and advice, to lessen the ravages of this prevalent source of illness and death, comes peculiarly within the province of our Institution.

I must not here omit to introduce Mr. Martin's opinion upon Fever. He says—"Fever is so universal with the Native, that until enlarged spleen, or bowel complaint (the Sequelæ to often repeated Fever) seizes him, he never thinks it necessary to apply for aid; and when he does, it is but to accelerate his fate: the compound of Arsenic and Spices, or the rude preparation of Mercury given by the Native Doctors, is efficacious to rekindle the feeble remains of constitutional power, only to sink the more rapidly into death."

I will not stop to urge how desirable it is to have separate Fever Hospitals, and to keep the patients suffering from fever apart and at a distance from other patients suffering from the effects of wounds and broken limbs, or under Surgical operations, because this is a part of the subject which will better become and be better handled by those of our body who are professionally conversant with such details, but I will hasten on to consider the subject as it is or is not recommended to us by its exigency, compared with the local position of our present establishments.

Upon referring to a Map of this City, it will be seen that it is a dense mass of Native houses and huts, which, from the Native Hospital northward, occupies an area of some three miles in length, by a mile and a half in breadth; that within this space, large indeed when considered with reference to its population, we have not a single establishment, save and excepting that of Gurranhutta, which is by no means centrically placed, and even if it was, would be quite inadequate to its wants even in times of ordinary sickness. If such be the case, it must then be conceded

that Mr. Martin has pointed out a field, to which the benefits of Medical advice and assistance, which is the sole object of this Institution, have not yet been extended, and that practically considered, his proposition to erect a Fever Hospital in a central position, within the area above noticed, merits our best attention.

It now only remains that I should say a few words respecting our Funds. From the accompanying Statements drawn up by our Secretary, in reply to some queries I put to him, it will be observed that, after paying all expenses incurred by our existing establishments, the present available average monthly sum is only 229-1-9 rupees, or if the sum of sicca rupees 616, the average monthly sum hitherto disbursed for the Leper Asylum, which, under a recent vote of the Governors, will in all probability be soon an available additional sum, we shall then have a surplus unappropriated sum of about 850 rupees.

Considered with reference to the average expenses of the other establishments of this Institution, we may, I think, conclude that the above available sum will be sufficient to meet the monthly expenses of a Fever Hospital, provided we can obtain sufficient means to purchase ground and to erect suitable wards and buildings for a Fever Hospital.

In the accomplishment of such an object conducive to the health and comfort of thousands upon thousands of their suffering fellow countrymen, be assured the wealthy Natives of this populous City will not be backward; to doubt this would imply an ignorance of the magnificent Donations already on the Records of this Institution, and which grace the names of the Newaib Vizier, of Rajah Buddenath Roy, Seebchunder, and Narsing Chunder Roy, and many others.

Nor can we entertain a doubt that the community, European as well as Native, whether of Calcutta or of the Mofussil Towns and Cities, will all unite in the furtherance of an object, which holds out such abundant anticipations of usefulness, and which addresses itself so directly to the best sympathies of our nature.

In conclusion, I beg to submit the following Resolutions, more with a view to place something tangible before the meeting than from any confidence that they will merit adoption.

Resolved. 1st. That, in the opinion of the Governors, the proposal to establish a Fever Hospital in a central part of the Native Town of Calcutta, is one of undoubted expediency.

— 2d. That the object is consistent in every respect with the objects of this Institution, which is to give Medical advice and assistance to the utmost possible extent.

Proposed by C. W. Smith, Esq., seconded by Sir John Peter Grant, and carried unanimously.

Proposed by Sir Edward Ryan, and seconded by Dr. Nicolson, and carried unanimously.

Proposed by R. Saunders, Esq., and seconded by B. Harding, Esq., and carried unanimously.

Resolved. 3d. That our present funds, with reference to the disbursements on account of existing establishments, do not give us the necessary available means to purchase ground and to build the projected Hospital.

Proposed by C. R. Barwell, Esq., and seconded by T. C. Robertson, Esq., and carried unanimously.

———— 4th. That, under such circumstances, it is highly necessary to solicit the contributions of all classes of the community.

Proposed by Sir Edward Ryan, and seconded by C. R. Barwell, Esq., and carried unanimously.

———— 5th. That a statement explanatory of the object now contemplated be drawn up, published in the English and Native Papers, and be circulated among the community, Native and European, in the City of Calcutta, and throughout the Towns and Stations in the Interior.

Proposed by Sir John Peter Grant, and seconded by R. Saunders, Esq., and carried unanimously.

———— 6th. That the following Gentlemen be appointed as a Sub-Committee, to give effect to the above resolutions, and to report, after the result of this appeal to the Public shall have been ascertained, to the body of Governors for such further consideration as may then appear necessary.

Sir Edward Ryan, Lord Bishop of Calcutta, Sir J. P. Grant, C. W. Smith, Esq., chairman ; Baboo Ramcomul Sen, Baboo Rajchunder Doss, Baboo Radakaunt Deb, S. Nicholson, Esq., J. R. Martin, Esq., Dr. A. R. Jackson.

Proposed by Sir Edward Ryan, and seconded by B. Harding, Esq.

———— 7th. That the Governors of the Native Hospital in laying the foregoing resolutions before the Honourable the Governor General in Council deem it right to submit for his consideration a Paper proposed by Mr. Surgeon Martin on the state of Calcutta and its Suburbs.

The Governors are of course fully sensible that the prevention of disease is even more important than its cure ; and the recommendations contained in this Paper appear to them of the highest importance, and have the sanction of all the experienced Medical gentlemen of their body. But the giving effect to any of these suggestions is of course quite beyond the objects and means of this Institution, and they deem it out of their province to do more than humbly to submit them for the consideration of Government.

Proposed by Sir Edward Ryan, and seconded by Sir John Peter Grant, and carried unanimously.

8th. That the resolutions of this day be communicated to Government.

C. W. SMITH.

Statement shewing the Receipts and Disbursements, monthly and annually, submitted at the last Meeting of Subscribers, on the 6th December 1834.

QUESTIONS.

What is the average Disbursements monthly, of the Native Hospital, for the last 12 months?

REPLIES.

August 31st, 1834.

To Disbursements from the 1st of Sept. 1833 to the 31st Aug. 1834..	13,064	11	7
Excess paid from the Funds of the Native Hospital, on account of the Dispensaries, from ditto ditto to ditto ditto	2,017	7	8
Annual Expenditure	15,082	3	3
Monthly average	1,256	13	7

RECEIPTS.

What is the income of the Institution monthly, including Government Donation, Interest of Paper, &c.?

Government Donation annually, at 1000 per month	12,000	0	0
Interest on Government Securities..	10,957	8	6
Barretto's Legacy	3,450	8	8
Subscriptions	516	0	0
	26,024	1	2
Monthly average	2,168	10	7

LEPER ASYLUM.

What is the average Disbursements on account of the Leper Asylum, taken on average of the last 12 months?

To Disbursements from the 1st Sept. 1833 to the 31st August 1834....	7,403	10	9
Average monthly	616	14	8

PARK STREET AND GURRANHUTTAH DISPENSARIES.

What is the average monthly expence of each of the Dispensaries?

To Disbursements from the 1st of September 1833 to the 31st August 1834	12,207	9	4
2 Surgeons' Travelling charges from Government, at 100 each.....	2,400	0	0
	14,607	9	4
Monthly average	1,217	4	9

RECEIPTS.

Government Donation annually, at 910	10,920	0	0
2 Surgeons' Travelling charges	2,400	0	0
Interest on Government Securities	498	12	0
	13,818	12	0
Average monthly	1,151	9	0

Total Receipts and Disbursements, Native Hospital, Dispensaries and Leper Establishment.

DISBURSEMENTS.

What is the monthly sum surplus after paying all expences?

Native Hospital	15,082	3	3
Dispensaries	14,607	9	4
Leper Asylum	7,403	10	9
Total....	37,093	7	4

RECEIPTS.

Hospital	26,524	1	2
Dispensaries.....	13,318	12	0
	39,842	13	2
	39,842	13	2
Surplus, Sa. Rs.	2,719	5	10
Monthly average.....	229	1	9

What is the surplus sum now in hand?

No surplus is kept on hand beyond what is required for current purposes, the rest is invested into Government Security and handed over to the Government Agent, whose receipt the Secretary holds.

Government Securities, the Property of the Native Hospital	Sa. Rs.	2,31,200	0	0
Ditto the Property of the Dispensaries	Sa. Rs.	10,000	0	0
	Sa. Rs.	2,41,200	0	0

E. E.

*Native Hospital, }
18th May, 1835. }*

W. DACOSTA, *Secretary.*

FEVER HOSPITAL.

THE situation I hold at the Native Hospital, afforded me daily opportunities of witnessing, on a large scale, the misery and death produced by the inundation of 1833, among the Native inhabitants of Calcutta and the surrounding country. Natives of respectability have assured me, that in the villages to the south and east of us, half the occupants of each house died of fever during that year:—some even went much beyond this estimate, but admitting both accounts to be exaggerated, the real amount of suffering must be admitted to have been terrible; and I am led to think, that the extent of the calamity is not generally known, and that were it known, the active sympathies of Government, and of all classes of Europeans, would be roused to prevent, or alleviate, if it could not prevent, the effects of similar calamities in future. I am of opinion, moreover, that a great deal could be done to secure the population, both European and Native, against a recurrence of so much suffering; and it was for the purpose of ascertaining the actual state of the town and suburbs, with a view to such preventive measures, that I committed to paper the result of several examinations of the localities in and about Calcutta.

The accompanying Memoranda contain a brief description of such of the defects observed, as more immediately presented themselves, and that demanded more immediate remedy: they have no other pretensions, and were printed only for my own convenience: they go chiefly to establish the general prevalence of fever amongst the Natives, and to point out its apparent cause.

On the subject of establishing a Fever Hospital in a central part of the Native Town, I beg to offer a few observations; and without reference to extraordinary occurrences, such as that alluded to, or any unusual epidemic, I declare my belief, that such an Institution has become one of necessity to the Natives, and that I know of no other, the active benefits from which would be so generally felt, and so gratefully acknowledged, as a Fever Hospital.

Fever is so universal with the Native, that, until enlarged spleen or bowel complaint (the sequelæ to often-repeated fever,) seizes him, he never thinks it necessary to apply for aid; and when he does, it is but to accelerate his fate: The Compound of Arsenic and Spices, or the rude præparation of Mercury, given by the Native Doctors, is efficacious to rekindle the feeble remains of constitutional power, only to sink the more rapidly in death.

As a commencement, I would propose, that the Fever Hospital be incorporated with the Dispensary at Gurranhutta, the existing establishment

of which, with some additions, would be sufficient for the present duties, and until the demand becomes great.

With reference to the convenience of the Native population, I would suggest that a spacious house for the purpose be secured, in a more central position, than that now used for the Dispensary, say about Cotton-street or Muchooa-bazar.

Besides the advantage to the community of the proposed change of place, it would bring the Hospital so much nearer the Students of the Native Medical School, as greatly to facilitate their recourse to it; and that is a point of much consequence, as it is in an Hospital alone they can ever acquire the practical knowledge which can render them generally useful. Under any possible advantages, the Natives cannot be expected, for many years, to become bold or skillful Surgeons; and it is therefore on their practical knowledge of fever especially, its nature and treatment, as exhibited extensively within the walls of an Hospital, that a great deal of their usefulness must depend.

To promote the objects here but hinted at, subscriptions might be solicited from the wealthier Natives throughout the country, for they are in an especial manner bound to support such an establishment; and it is a mistake to suppose, that its charities would, any more than those of the Native Hospital are at present, be confined to the inhabitants of Calcutta; for in it we have persons daily from every portion of the presidency, from Cuttack to Loodianah; and the followers of the Sikh Embassy, who made frequent applications for relief, declared the benefits conferred by the Hospital, to be well known even in their distant country.

On the subject of the Leper's Asylum, I submit that, with reference to the objects and the original establishment of the Native Hospital, and the active nature of its charities ever since, such a plan of pure Medical Police as that of the Leper's Asylum, is not compatible with the purposes of the parent institution, in which active relief and cure are daily aimed at; whereas, as I have said, the other is only an establishment of Medical Police, limited to granting of food, clothing and quarters—a cure being out of the question. Such an establishment is well for the Town of Calcutta to maintain, and I think it ought at once to be transferred to the Police Establishment, or such other mode as may appear best to the Governors. By this measure alone, a sum of 500 rupees per mensem, on an average, would at once be placed in the hands of the Governors.

On the contemplated improvements in the Town and Suburbs, I have only to say that I shall feel much gratified if their importance has been made in any way apparent to the Governors, and if through any efforts of theirs, a remedy can be obtained for an evil that will otherwise certainly go on increasing.

Finally, I throw these matters on the better consideration of the Governors of the Native Hospital, through whose continued humane exertions with the authorities and the public, so great a benefit has already been secured to the poor as that exhibited by last year's Returns of the Native Hospital and Dispensaries under their orders, viz. 2,48,684 persons; an amount of relief that could hardly have been anticipated by the most sanguine, when, in 1792, the Governors of the day first addressed the inhabitants of Calcutta “on the subject of instituting an Hospital for the relief of the Natives.”

(Signed) J. R. MARTIN.

Native Hospital, {
April 9th, 1835. }

N O T E
ON THE
MEDICAL TOPOGRAPHY OF CALCUTTA
AND ITS SUBURBS,
CHIEFLY WITH REFERENCE
TO THE
CONDITION OF THE NATIVE HEALTH.

“If we except a knowledge of the symptoms of diseases, and the powers of the remedies used to combat them, there is, perhaps, no one species of information of greater importance to the medical practitioner than that which teaches the effects of *climate, locality, and other external causes* upon the health of man.”

DR. HENNEN.

A KNOWLEDGE of the external circumstances which influence the health of the inhabitants of any particular country, commonly designated Medical Topography, when practically considered, has for its object the *prevention* of disease, which in a large proportion of cases, originates in *external causes*.

Of its great importance therefore, there can be no question, and it has been found at all times to progress in exact accordance with the state of civilization in any given community: Malte-Brun, when speaking of the most temperate climates, declares, “that it is man himself who has in a great measure created these salubrious climates; France, Germany, and England, not more than twenty ages ago, resembled Canada, and Chinese Tartary, countries situated, as well as our Europe, at a mean distance between the equator and pole.” Much as has undoubtedly been effected in the countries alluded to, through the suggestions of professional men, still more has been done by the common sense and observation of the public at large; and fortunately, it does not require a technical, or professional education, to enable a person to prosecute Medical Topography, any more than quarantine regulation, with the greatest advantage to the public: So much has it been so on many important occasions, that Dr. Hennen, himself, the best writer on the subject that I am acquainted with, has complained that during the plague at Malta, “the trammels of medical theories” had perverted the better judgments of certain medical officers, and that their opinions had been “tortured to the purposes of professional controversy” to the degree that, from all the evidence he could collect, he much preferred the plain common sense of Sir Thomas Maitland, the then Governor.* I think it is useful to point out this fact, as it ought to encourage

* Before the publication of Dr. Hennen’s work, the best account of the Medical Topography of the Mediterranean was that of Captain Smyth, of the Engineers.

the non-professional in the prosecution of so beneficial a subject ; and to medical men it ought to teach the superior value of practical observation over theory—so often dignified with the name of Science. On the other hand, I think that, in this country especially, there are few matters, next to the right treatment of disease, to which patient and observant medical officers can apply their minds with more benefit to the State, or credit to themselves, than Medical Topography ; and I am much mistaken if most stations, civil and military, throughout India, do not stand greatly in need of the practical application of a knowledge thus acquired.

The generality of diseases dependent on external causes.

If we accord in Sir Gilbert Blane's opinion, that all predominant diseases are referrible to the following general heads, viz. 1st. Vitiated exhalations and secretions of the human body. 2dly. Noxious exhalations of the earth, and 3dly. Depraved habits of life;—we shall at once see how much of public health, in the great matter of *prevention* of disease, may be effected through a practical application of the Science of Medical Topography. The injury from human exhalations is removed simply by prevention of crowding, by exposure to sun and wind, cleanliness, &c.; and that from terrestrial exhalation, by draining, clearing, levelling, &c.

Having made these prefatory observations, I shall proceed, briefly and free from technical language or theoretical discussion of any kind, to point out what I conceive may be done with ease and without serious cost, to improve the immediate locality of this city and its suburbs, chiefly with a view to ameliorate the condition of the Native health.

A detailed Topography of Calcutta not intended.

A detailed Medical Topography of Calcutta would comprehend a variety of subjects which I conceive foreign to the practical objects, to which I would limit myself in these Memoranda :—I shall therefore pass over the questions of position, boundary, sea, rivers and canals, temperature, climate, soil, levels, police, population, morals, &c., and proceed at once to the subject.

Climate every where improveable.

That it is in our power, by removing defects of locality, to remedy those of climate, and thereby conduce largely to the preservation of public health, need not again be insisted on. The history of every country and of a hundred cities speaks to the fact ; and perhaps of none more than that of Calcutta, though its improvement has been so gradual as to escape notice.

Extended agricultural and other improvements produce remarkable influence on health in all parts of the world ; but those in and about Calcutta have, with exception to the works belonging to Fort William, the Mahratta Ditch, and those effected by the Lottery Committee, been chiefly from the clearing and draining, preparatory to the construction of buildings, roads, &c., the result of private speculation and enterprise. But as all these sources of improvement have, for some time past, ceased to operate, and as they are not likely soon to revive, it is much to be feared that, without the aid of Government, this city will experience the gradual effects of neglect, and become as unhealthy as we know it to have been in former times. “ It is only by constant efforts of industry that the salubrity of any spot is maintained : when these are relaxed, or when prosperity and civilisation decline, the seeds of disease are immediately deposited in the earth.”

Hawkins' Statistics.

It may be useful to look back for a moment to what Calcutta *was* in the earlier periods of its occupancy by Europeans ; and from many accounts that

might be cited; I have chosen the following, from the travels of Captain Alexander Hamilton, who visited India between the years 1688 and 1733.

“ One year I was there, and there were reckoned in August about twelve hundred English, some military, some servants of the Company, some private merchants residing in the town, and some seamen belonging to the shipping lying at the town, and before the beginning of January there were four hundred and sixty burials registered in the clerk's books of Mortality.”

This worse than Batavian condition, and frightful suffering, are ascribed by Captain Hamilton, to the annual subsiding of the salt water lake; leaving its marshy banks covered with fish and exposed to a vertical sun. No doubt this had a most injurious effect; but the unimproved state of the grounds in and about the town—the marsh and rank vegetation, producing constant unwholesome exhalations, retained and accumulated in a humid atmosphere—these too had their full share. On the subject of the choice of Calcutta as the site of the British “emporium,” the same authority declares, that Mr. Job Charnock had no better reason for it, than its possessing “a large shady tree,” (!) and it is further added (truly enough) that “he could not have chosen a more unhealthy place on all the river.”

In more recent times, it was the custom of the European inhabitants of Calcutta to meet on the 15th of December of each year to congratulate each other on their escape from the period so emphatically marked by Captain Hamilton; but though this is no longer considered necessary on account of the insalubrity of the place, still I think it will not be difficult to shew that we are far indeed from having effected for our “emporium” all that might, or ought to have been done for it. For many years to come, little more can be expected from that commercial and private enterprise to which Calcutta has hitherto owed so much; and it therefore becomes the more urgent on the part of a great and liberal Government, to take a lead in so humane and beneficial an undertaking.

That remittent and intermittent fevers, with all their fatal consequences, prevail to an extraordinary extent in all parts of this city, and during every month of the year, but especially on the decline of the rains, any man may satisfy himself who will enquire as I have done, on the spot; and here I purposely omit the result of my observations at the Native Hospital, where, though it be more strictly a Surgical institution, the worst forms of fever, existing any where, are brought daily, and that generally in an advanced stage. I omit this, in order to speak to what I have seen on the spot, in the houses of the poorer Natives, where I have often gone to learn the fact of the existence of the fevers in question, with their sequelæ of spleen, dropsy and bowel complaint. There is another fact connected with the last, which does not rest solely on the opinions of physicians, but is supported by the general observations of mankind, viz. that the fevers in question arise *from marsh and other exhalations*.

It having been shewn then, what this locality once was, and what, by neglect, it may again become, I proceed, in as brief a manner as possible, to point out the works which I consider as likely to improve and maintain its salubrity; and first, of the streets.

Pinkerton's Voyages and Travels.

Former unhealthiness of Calcutta.

Former unhealthiness of Calcutta.

Prevalence of fever amongst the natives.

The Streets.

Whoever has visited before sun-rise, the Native portion of the town, with its narrow lanes, and “ranked compound of villainous smells that ever offended nostril,” will require no arguments in favor of widening the streets, so as to effect the two greatest improvements of all, as respects the salubrity of a city—free exposure to the sun, to rarify and elevate the vapours, and to the winds, to dilute and dissipate them.

It were easy to point out where clearing out masses of building, and widening and new-forming streets should be effected; but here I shall only indicate the necessity for these measures, in almost every part of the Native town: the details could easily be arranged afterwards. Where new streets are formed, they should be, as much as possible, in the direction of the prevailing winds. All streets should have raised pavements on each side, for foot passengers.

Habitations of the Natives.

It is surprising how much the condition of the Native habitations has been neglected in this great city and its suburbs, in which are to be found all the faults of all the cities in India. It may not be very easy efficiently to interfere in this matter, and it may be very true that it is easier to find fault, than to remedy the evil complained of; but in an affair of so much importance to the health of the inmates, *something* may and ought to be tried at least, if only in the way of municipal or police regulation.

While in Ava, I was forcibly struck with the superior mode of building amongst the Natives, which in point of airiness, elevation and mode of construction, constitute the best habitations for the poor I have ever seen in any country; and I have no doubt they contribute much to form the hale constitutions of the Natives as contrasted with other Asiatic races. There, every man is raised above the ground in proportion to his means, and even the poorer classes are three feet above it; while here, nine-tenths of the entire population sleep on the ground. Dr. McCulloch, in his account of the Hebrides, states that, while the inhabitants had no shelter but huts of the most simple construction, which afforded free passage to currents of air, they were not subject to fevers; but when, through the good intentions of the proprietors, such habitations were provided as seemed more comfortable and commodious, but which afforded recesses for stagnating air and impurities, febrile infection was generated.

In the event of a contagious disease (and there is no reason why such should not occur here,) the dense state of the Burra-Bazar and surrounding parts, the want of facility for removing accumulations of filth, &c. would stand as insuperable bars to the best devised regulations of medical police. All masses of buildings should be opened out, old walls and decayed buildings removed; for these are fertile sources of fever, even under ordinary circumstances.

Habitations of the Natives.

If it amount to a demonstration, as stated by a distinguished author, that “freedom from some of the most fatal scourges of the human race, and a gradual amelioration of health” can be traced to the “free exposure of the streets of London* to the sun and wind, a hard regular pavement, preserved clean by proper scavengers, the construction of common sewers and privies,

Dr. Bateman's reports on the diseases of London.

* “Dr. Caius, the most eminent physician in England at that period, states that the mortality of London from ague in 1558 was such that the living could hardly bury the dead.”

and the advantages of a flowing stream," what amelioration of the public health may not be expected from similar measures in such a city as this, situated as it is within the tropic?

There is probably no subject, connected with the public comfort and health of a city, of more consequence than the state of the sewers. Those of Calcutta throughout, I believe to be defective in number, construction, and fall, without which last, the most approved plan gives no real usefulness. The great sewers should be of solid masonry and arched over; and they should have lesser communicating sewers proceeding from every house, and their fall should be such as to admit of no arrest of their contents: such of the sewers as terminate in the river, should have their mouths at ordinary low water mark. Open sewers should, when practicable, be made in the direction of the prevailing winds, and wide, so as to admit of exposure to the sun and free ventilation.

As the river water, during the greater part of the year, is brackish, and unfit for general use, the chief supply for all classes of Natives is derived from tanks which, properly constructed, ought generally to contain wholesome water; but purity being an object of great importance, it is to be regretted that more attention has not been bestowed on the construction of these reservoirs. New tanks, on approved plans, should be dug at convenient distances throughout the Native Town, both for affording an ample supply of good water at all seasons, and as helping to carry off under-ground moisture: all half-dried tanks and pits should be carefully filled up. Bathing might be permitted in such tanks as are unfit for other use; but clothes-washing ought to be prohibited.

If the wealthier Natives must need have tanks within their premises, the Police should oblige their being kept clean; for at present, I am told, they are universally in a neglected and filthy state.

Wells should be encouraged throughout the Native Town. They are useful in draining under-courses, and though the majority be brackish, the water will yet be found available for domestic purposes and conducive to cleanliness. Artesian wells would be eminently useful.

Cess-pools ought also to be encouraged in the Native quarters.

No burying-ground should be allowed to be in use near the Town, and the Native one off Lower Circular Road should be closed and brought into cultivation so soon as possible. I have known it complained of by persons residing in the neighbourhood.

No rice cultivation should be permitted close upon the Town, and all belts of bamboo ought to be cut down and rooted out.

All butcher's markets and slaughter houses should be removed to the outskirts of the Town, on the river bank, and be constructed on more approved principles than any now extant. The Turret's bazar does little credit to European taste, whether as respects situation or cleanliness. The chief meat bazars of this city should have a free water-course in every direction, and be paved with Chunar stone.

The duties of Police Surgeon ought to be extended to the strict supervision and periodical report on the state of the habitations, sewers, streets, roads, and tanks, &c.:—he should also report minutely on the state of the suburbs.

The Sewers.

Tanks.

Wells.

Cess-pools.

Burying-ground.

Rice cultivation near the Town to be prohibited.

Butcher's markets.

Duties of Police Surgeon to be extended.

The conclusion I would draw from all that has been here said, as well as from my personal observations on the condition of the Natives residing in and about Calcutta is, that a Fever Hospital has become *absolutely necessary*, and that from the want of such an institution, thousands die annually within the City and its Suburbs.

Fever Hospital.

A Fever Hospital ought to be constructed in an open central part of the Native Town, well raised on arches and on the most approved principles of ventilation.

It should contain spacious wards for Hindoos and Mahomedans, with separate entrances to each, and separate offices and tanks.

Independently of the great benefit to the suffering Native community of such an institution, it would form the best school of practice for the Native youth of the Medical profession.

Native Hospital
Records, Minute of
Mr. Dowdeswell,
1810.

Such an establishment, however must, in the words of a former Governor of the Native Hospital, when urging its advancement, be assisted from "the Treasury of Government," and "I do not know that the public revenue can be applied to a better purpose than that of saving the lives of those who pay it."

P. S.—It must not be supposed that in what I have stated as necessary to be done within the Town, I have comprised *all* that may be requisite or conducive to the public health :—far from it, but as I set out with the intention of only calling attention to what appears *most* necessary, and may be attended with least expense, I have omitted many details.

The recent shock to mercantile credit will for some time prevent any great improvement being effected, as before, through private capital and enterprize; and from the Natives we cannot expect much *until they are shewn the usefulness of public works*; when, I am confident, they will do more than build ghâts.

All I have said of the Native City applies to the inner Suburbs called Kurbalah, Simlea, Mirzapore, Paritollah and Collingah, where defective drainage and half-dried tanks are every where to be found; but as details would occupy more space than such a sketch as this admits of, I proceed to notice the condition of the outer Suburbs.

THE SUBURBS.

Without attention to the state of the Suburbs in the first instance, it is useless to attempt any great improvement within the City. While every square acre of the circumference is left in a state worse than that of nature, it were in vain to work in the centre. The improvement of the Suburbs too, as it will prove of the greatest benefit to health, so I think it will also be least in point of cost.

Great works in masonry will not be required here: but before I proceed to the several Suburbs around Calcutta, I beg to solicit attention, for a moment,

to the beneficial effects resulting from very simple and apparently trifling improvements, executed at my suggestion some years back, in the cantonment of Ballygunge. •

Having shortly before served with troops in the field, in the very unhealthy countries of Orissa, along the borders of the Chilka lake towards Ganjam, and the interior of Gundwana, on the Mahanuddy, I was appointed to the Governor General's Body Guard at the Presidency in 1821; and there I found severe remittent fever, such as I had first seen, and personally suffered from in the jungles, prevailing to a great extent, and I learned that it had been so for years.—To ascertain the cause of a state so different from what I had been led to expect, I made several careful examinations of the localities, and discovered that in the men's lines alone, besides stagnant drains, there were sixty pools and pits of various dimensions, to all which, and the neglected state of the grounds around the Regimental Hospital, I had no hesitation in referring as a sufficient cause of the extreme unhealthiness of the Corps. I represented the necessity of drainage with a sufficient fall—the filling up of all the pools and pits, and the construction of two large tanks at a proper distance from the men's lines.

The then Governor General—Marquis of Hastings—was pleased to order all my suggestions to be carried into effect, and the result during the three following years was, a reduction in the frequency and intensity of fever, as remarkable as it was satisfactory; and I had intended to have brought the details to the notice of authority, but I lost my papers in a shipwreck on the coast of Ava, when proceeding thither during the late war, with the Body Guard. The fact, however, is as I have stated.

What I am about to notice regarding the Suburbs is from repeated personal observation. I began north-east of the Town, about Chitpore, and carried my examinations toward the south, until I reached Mr. Kyd's dock-yard. I have personally examined Chitpore, Nundenbaug, Baharsimlah, Komar Parrah, and Secaldab, and find that one description will serve for all, viz. general irregularity of ground, affording lodgments of various extents for stagnant waters, now very offensive; drainage every where defective, and good tank water scarce. There are also belts of jungle trees and underwood, obstructing ventilation. In all these villages the replies of the Natives confirmed what indeed any one could have predicted, as to the general prevalence of remittent and intermittent fevers.

The new earth dug from the canal, and now heaped all round might readily be made use of to level and fill up the thousand pits and half-dried tanks which now form such fertile sources of noxious exhalations in these villages. The banks of the canal should be carefully preserved from all accumulations of filth and rank vegetation. This applies especially to the head of the old canal at Baliaghatta, where it should be deepened, and where I have often observed the banks in a noisome and neglected state. Spacious tanks should be dug at convenient distances, and the earth thus procured made use of to fill up the irregularities of ground. * All underwood and belts of jungle trees should be rooted out.

From the frequency with which I have seen the unhealthy state of the Suburb of Entally set forth in the daily prints, by persons professing themselves

State of the Villages along the new Canal.

Mode of improving them.

Entally.

inhabitants, I had expected to find more of the sources of fever there than in the last mentioned villages; but in truth they are all bad enough, and the difference as regards Entally lies chiefly in this, that a large proportion of its inhabitants are Christians, and can make their grievances known. Entally is fully in as neglected a state as any locality pointed out in this paper, and any one need only observe, to know the remedy. It is so obvious, that I need not enter on what would be but a repetition.

Ballygunge.

The drains of Ballygunge are all in a neglected condition, and require clearing, with a proper fall. There is also much bamboo and other jungle, all around, which ought to be rooted out. I know of no quarter near Calcutta so much in need of this latter.

Bhowanepore.

This is the most populous of the Native Suburbs, and I believe it was the most severely visited by the remittent fever of last season. To this "bad eminence" it would seem fully entitled through its low, closely-built and ill-ventilated streets, its great stagnant ditches, lined with rank vegetation, its back-ground of extensive marsh and underwood, and its innumerable half-dried tanks and pools. The Native residents whom I questioned on the spot, spoke of the last year's fever as universal, and declared its ravages as having been more extensive than the oldest of them had ever seen. No doubt all this is true, for epidemics are observed in all countries to fasten with the firmest gripe on such localities: they are "accessories in fostering and multiplying" them. Stavorinus, speaking of the "sort of sickness or fever" which generally prevailed amongst the Natives about Calcutta during his visits (1768—1771) says, that it "generally sweeps away those who are attacked by it in the space of three days."*

Good tanks are very much wanted in this Suburb, the inhabitants having now to proceed to the distant "General's tank" in Chowringhee, that being their only source for the supply of wholesome water.

Khidurpore.

I thought I had visited the worst of the Suburbs in Bhowanepore, but Khidurpore, which is next in populousness, greatly surpassed it. I think I never saw in any part of Bengal or Orissa, a locality so generally bad, and the result corresponds entirely with its condition. Fever is general throughout, even at this season, and the want of good water forms a universal complaint amongst the inhabitants. There is not a square rood that is not in a state of surprising neglect, and the portion between the bridge end and Kyd's dock is one entire jheel.

I need not again speak of the remedy for all this; but I beg to mention what I consider next to draining, levelling, and clearing, as being of most importance to the last mentioned Suburbs, viz. flood-gates from the Tolly's nullah, to wash out the drains. Those from the left bank would fall into the Hoogly, clearing out the drains of Garden Reach in their course: whilst those from the right bank, having swept through Bhowanepore, should enter the Mahratta Ditch, and pass along the Circular Road, terminating in the head of the Canal. How much would Calcutta be improved by such *scouring*!

From their situation and neglected state, the great Suburbs of Bhowanepore and Khidurpore are peculiarly exposed to the effects of inundations, such

* Voyage to the East Indies by Stavorinus.

as occurred last year, and they therefore demand an especial care in their improvement.

Allipore from better drainage, and being more elevated, did not suffer nearly so much during last season.—A circumstance well deserving of notice, when compared with the state of Garden-reach, where scarcely a house escaped the epidemic fever; and I knew one in which every individual, European and Native, was attacked.

Allipore.

Finally, it may be said with truth, that of all the places noticed, there are not six square acres of soil occupied by Natives, which do not contain marsh, and other concentrated sources of periodic fevers, which in the course of time establish their inevitable sequelæ of spleen, and fatal diarrhoea—the brief history of the life and death of two-thirds of all the poor inhabitants around us.

POSTSCRIPT.

On Draining the Salt Water Lake.

I beg to offer a few observations on this subject; for on the mode of doing it the whole advantage, as regards salubrity, depends. To drain the lake for the purposes of agriculture is easy; but to deprive the ground of its noxious exhalations, is not so.

Salt Water Lake.

It is not sufficient to convert the ground into a state of low meadow land; for the most dangerous exhalations are those which are retained, and occasionally emitted from under a crust of earth, whereby they would appear to acquire unusual concentration, and become sources of the worst fevers. A deep and well constructed canal would seem the best mode of effecting the drainage; but as even this must to a certain degree prove a receptacle for noxious matter and offer a considerable surface for evaporation, a close line of umbrageous trees should be planted along each side of the canal, as being powerfully attractive of marsh exhalation. This property in trees was practically known to the ancients* and is now beneficially exemplified in Demerara, and other parts of Guiana, “where the humid heat constantly cherishes the seeds of disease.”

Vide Transactions
Royal Society of
Edinburgh.

The ground, cleared from water, should be well ploughed and cultivated, —the ploughing to be done during the heaviest rain, so as to prevent exhalation; for it is during a *certain stage of the drying process*, that marsh exhalation is most concentrated, and it has been observed in many countries, that the drying up of *brackish water* is more injurious than that of either salt or fresh, alone. A succession of crops purifies and evaporates the soil, and thereby obviates exhalation; but they should not be of rice, or such crops as require profuse irrigation.

McCulloch on 'Ma-
laria.

Transactions Royal
Society, Edinburgh.

Dr. Hennen's To-
pography.
McCulloch.

The want of attention to some of the precautionary measures above hinted at, has lost the beneficial results that would otherwise have arisen from the

* Regand de L'Isle says of the Malaria of Italy, that “various obstacles form barriers which they cannot pass, and against which they deposit themselves.”

extensive draining executed in some parts of France and Italy ; and I have only thus long dwelt on that of the Salt Water Lake, because I believe its proper performance to be a matter of great importance to this City, as far as regards the prevention of disease ; and I need not here insist on the superior efficacy of *preventive measures*, such as have advanced in our own country apace with our civilization, and altogether banished from us some of the severest calamities that have ever afflicted the human race.

Native Hospital, Calcutta, February 24; 1834.

EXPLANATORY NOTE.

IN explanation of my two former Notes, I beg to state to the Governors—

1st.—That it has been objected, to the proposal of establishing a Fever Hospital, that Natives are disinclined to such an Institution, and have no settled confidence in the superiority of European skill. The experience of the Native Hospital and Dispensaries is against this notion, for in both, hundreds of thousands of Medical cases,* and especially those of Fever, have been treated : men who have once been cured of one disease in Hospital, (no matter whether Surgical or Medical) will naturally enough seek the same place of relief under all diseases ; and this we find to be the fact.

2d.—That it is not contemplated to limit the benefit of the proposed Institution solely to Fever, but that it shall extend to all *Medical* cases whatsoever. This would be a great relief to the Native Hospital, by admitting of its greater usefulness as a Surgical Institution.

I have often thought I did injury to wounds and ulcers by admitting numerous cases of Fever and Dysentery ; but I could not avoid it : moreover, there is this disadvantage in mixing the two classes of Native patients, that the Medical patients are often frightened away before their cure is completed by viewing the cases of severe wounds, accidents, and operations, common to a Surgical Institution, like the Native Hospital. This very frequently happens to us.

3d.—That in reference to the Paper No. 2, it has been objected, that too much stress has been made to rest on the improvements of the Suburbs. I hope I have not appeared to underrate the advantage and necessity of internal improvements : nothing can be more necessary, or important ; but I believe that were this City as well drained, ventilated and cleaned as London, much of the existing evil would still remain so long as all around us continues as at present ; and bad as the Native Town confessedly is, the sources of fever are by no means so concentrated or general in it throughout, as in the Suburbs : for one case of Fever inside, I am much mistaken if there be not two beyond the Mahratta Ditch : by far the majority of our Fever cases come from a distance.

* During 1833, there were applicants, on account of Fever and Spleen, at the Colingah Dispensary alone, 19,529 : Ditto ditto in 1834, 20,982.

4th.—That on referring to Captain Forbes of the Engineers, for a rough guess, relative to the annual cost of the more necessary and obvious improvements, he says that “with an additional income of 40 or 50,000 rupees per annum, applied to a general plan of drainage and clearance, Calcutta might be as well managed in these respects as any City in the world.”

5th.—That in submitting matters, not ordinary to the purposes of this institution, I feel I draw largely on the consideration of the Governors of the Native Hospital, and the only excuse I can offer lies in the great importance of the subjects submitted, and my settled conviction, that I can only hope to forward them through such support as the Governors may consider that they deserve.

J. R. MARTIN.

Native Hospital, Calcutta, May 20, 1835.

NOTE FROM DR. VOS TO MR. MARTIN'S ADDRESS.

After the personal observations I have made in several parts of the world, including Walcheren and Batavia, I can freely say that there is no place I have visited where Fever abounds so much, and where its progress is so quick and fatal, as in the lower parts of Bengal.

My long residence in Calcutta and the opportunities my professional and public duties afford me of visiting the Suburbs, have given me an insight into the state of health prevalent amongst the lowest orders of the Natives, as well as amongst the higher and middle classes.

This certainly is very bad, but it is surprising that it is not a great deal worse, when we consider the climate and situation, besides their own mode of living, accustomed to the extreme of filthiness; for though they preserve their persons clean by constant ablutions, yet they dispose of all kinds of filth and dirt by throwing it in their compounds or into the adjacent drains, where it is left to produce an obnoxious effluvia. This contributes to the unhealthiness of the place, and is the very seed of those malignant fevers to which the lower orders are so universally subject, and which are followed by the chronic and fatal diseases, Dysentry, Diarrhœa, and Spleen. This is proved by the patients admitted into the Police Hospital, where fevers are small in number compared with the diseases above named, and why? Because the poor wretches brought there, are only those who are perfectly destitute, and found lying about the streets; who have, for the most part, been suffering for a long period of time, and whose disorder, I doubt not, originated in fever.

Some of them are probably not aware that there exists a Hospital, where they may obtain relief, and others neglect applying to it from the aversion they have to mixing with those of other castes. In 1833, and during the months of October, November and December 1834, the number of patients was exceedingly great; the majority had come from the southern parts after the inundation, and had been attacked with fevers, under which they were labouring when they were found all over the Town and Suburbs.

Besides filling up as much as possible every dirty pond and tank, keeping the Town clean, and watering the streets properly, I do not think more immediate improvements are necessary, except that of the establishment of a Fever Hospital in the midst of the Native population. This should not be for beggars and destitutes, but for a better class, such as the servants of the Baboos and other wealthy Natives, also for Musselmen and Hindoos, and the servants of European families in general.

For those only who are destitute there is no such place necessary, the Police Hospital being sufficient for that purpose, and as it is about to be removed, we shall, I trust, have it under still better management than at present. This Hospital originated, I believe, in the Magistrate C. W. Blacquiere, Esq., and has now existed about fifteen years. The Police people are exceedingly active in conveying thither all the poor, helpless Natives, both Hindoos and Musselmen, men and women, that are found lying in the public streets. We have had last year even more than twenty Children at one time, and there they are provided with all their wants require.

The Police Hospital is filled up with all kinds of people ; who have disorders of the most contagious and malignant character, viz. Fevers, Dysentery, Diarrhœa, Spleen, Syphilis, Small Pox, and old sores, and often women near their confinement. In case a Fever Hospital be established, of course they will have the opportunity of entering it earlier and in a better condition, and thus will have a greater chance to recover ; as it is impossible for any man to recover from Fever speedily (if at all), whilst in the same place with many labouring under the worst of diseases.

The Suburbs require much improvement, and as long as this object is unaccomplished, Calcutta cannot be healthy, it being surrounded with jungle on all sides except the river ; the Suburbs of Calcutta are full of dirty pools, and no sufficiently large tanks. I shall not enlarge on the best way to effect this, but would only add, that there is continual sickness in most families except those who live in upper-roomed houses.

The population of Calcutta is increasing so much, that there is an immediate want of a Hospital for poor Hindoo-Britons and poor Roman Catholics. I have continually poor Christians in the Police Hospital.

A Lying-in-Asylum for Christians and Native women would also be a great acquisition, for I am convinced that many, in small huts and filthy places, die for want of proper room and care, being very poor, but not quite destitute. It will however be a difficult matter to induce the Natives to consult their own interests so far, as to have recourse to the Hospital when they are first attacked ; they will on the contrary keep out of it as long as possible, even till they are unable to walk or go about, and then are taken up by the Police people ; but if it be so conducted as I have said, as to preserve the castes separate, I doubt not many will go to it voluntarily.

I trust you will excuse the length of this letter and the errors it may contain.

Your's, &c.,

J. R. VOS.

Calcutta, 18th May, 1831.

**NOTE FROM DR. JACKSON TO MR. MARTIN'S
ADDRESS.**

I return you your printed Notes, and Letter to the Governors on the subject of a new Fever Hospital. I should have entered more fully into detailed remarks, had I had more time, but having given the papers to Ramcomul Sein, whose assistance I was anxious to secure in the arrangement of this scheme, I have been deprived of seeing them, as I at first intended: however, I have the satisfaction of sending a set of hints, sketched by him at my suggestion, and in answer to the replies containing our ideas on the subject, which I hope will prove serviceable in exhibiting the feelings of Natives better than we could do.

I most fully concur with you in the propriety of establishing a Fever Hospital, it is an Institution undoubtedly of the greatest importance to the poorer classes of the Native community; whatever other morbid affections we may annually calculate upon, we may always rest assured of the prevalence of Fever amongst the Natives. The mortality from this source and its sequelæ, Visceral Obstructions, Dysenteries, Bowel Complaints, &c., I know to be very great, and had good opportunities of judging of, during the six years that I was Assistant Marine Surgeon, and attached to the Marine Department, for the Lascars, Clashies, &c. belonging to the different divisions and vessels, at times suffered severely, and I had no place to send them to. The fact of Fever and disease in general not being contagious in this climate, I do not consider as an argument of any weight against the necessity of such an Institution as we are desirous of seeing founded. Epidemics may, and do frequently prevail to a fearful extent, and devastate a country, while perhaps no well attested example could be produced of their being conveyed from person to person; are we on this account to offer no Asylum to the miserable beings afflicted by such a visitation? I have been at considerable pains to ascertain the feelings of a large portion of the wealthier Natives, and have no hesitation in stating my conviction, they will come readily forward in aiding and assisting, both with money and suggestions for detail of management, and one opulent man, I am induced to believe, will give the donation spoken of, Sa. Rs. 20,000, as soon as he is satisfied that the idea is seriously entertained, and likely to be acted upon. There are several houses in the neighbourhood of my Dispensary, at Gurranhatta, at Simlah, which might serve as a commencement, and I shall be glad and ready to devote all the energies and exertions I can, to forward the undertaking.

Your's, &c.,

A. R. JACKSON.

Calcutta, 19th May, 1835.

OBSERVATIONS BY BABOQ RAMCOMUL SEIN AND DOCTOR JACKSON.

Importance of large Hospitals in Cities.

OF all Charitable Institutions ; the establishment of Hospitals for the relief and preservation of health of the poor and infirm, is of the greatest benefit and utility, particularly in a metropolis like Calcutta, to which people from every part of the country resort.

Existing Institutions in Calcutta and unwillingness of the Natives to resort to them.

There is a General Hospital, a Sanatarium, and other Institutions, which afford Medical relief to Europeans ; but there are none which are of adequate service to the immense number of poor, homeless and helpless Native inhabitants and emigrants, in and about the Town of Calcutta. It may be said that there is a Native Hospital, and two Public Dispensaries, but the people do not generally avail themselves of the benefit of these Institutions.

The Dispensaries give but partial relief.

The Dispensaries supply Medicines to such persons as are able to attend personally, and to show themselves to the Superintending Surgeon or Apothecary, but if the dose of Medicine they receive does not produce the expected relief, or operates with any degree of violence, or if their illness increases, they do not present themselves again or apply for more Medicines, and nothing more is known of their history. Indeed there are many who receive Medicine from the Dispensaries, but do not take it at all. The Native Hospital is well calculated, and was originally established, for Patients laboring under external or accidental injuries, such as are constantly sent by the Police ; but people affected with Fever or other diseases, of whom great numbers die annually, derive hardly any benefit from it, and considering their habits, customs, and religious scruples, it is not to be wondered at that they are averse to accept the relief held out by this Institution, and that they would rather die in their huts and cottages, than have recourse to the Native Hospital, which admits indiscriminately, and without separate accommodation, Patients of all classes and castes. The object of these few Notes is to suggest something for the relief of persons of this description.

The Native Hospital is rather for Surgical aid.

Why Native sick do not resort to the Native Hospital.

Fever is unquestionably the most prevalent complaint in and about Calcutta, and the causes are very ably stated in the accompanying Paper by Dr. Martin. The following may be stated as amongst the various causes productive of Fever.

The necessity of a Fever Hospital.

Particular causes of Fever remarked.

1st.—Want of Tanks in different parts of the Native Town to supply wholesome Water for drinking.

2d.—Accumulation of Filth and Stagnant Water.

3d.—Shallow Tanks, with unwholesome Water.

4th.—Digging pits and holes and leaving them open.

5th.—Drains.

1st.—The want of good Tanks in Calcutta is severely felt by the Native population. The only public Tanks we have in Town are—

Loll Deghee,	Puttuldanga, and
Wellington Square,	Hadua.

The 1st of these is crowded from six in the morning to ten at night, and were it not for its communication with the River, it would be dry between April and May every year.

Of the 2d, the water is said not to be very good.

The 3d one is shallow, and the little water which it contains in the dry season is not fit for ordinary purposes. It has moreover been spoiled by being frequently filled with water carried from the public drains.

The water of the 4th is very little used, but owing to what cause I do not know.

As to the River, I need not describe the insalubrious and filthy state of the water during the greater part of the year, which is known to almost every one, and for want of proper Reservoirs, poor people are obliged, from their circumstances, to use any water which they find conveniently within their reach.

II. The drains of Calcutta, as far as regards passages for carrying off the rain water into the River and Circular Canal, are tolerable, but the sewers in most parts of the Town are in a very offensive state, independant of the accumulation of stagnant water from Kitchens, &c.

III. There are a great many shallow Tanks within the Town, which have very little water, and that of the worst quality during the greatest part of the year, the effluvia from which is sufficient to sicken people passing or living by them. Many of these are yearly filled up with street sweepings and rubbish collected by the Conservancy people, who throw into them all sorts of dirt, without regard to the distress and annoyance felt by the people living about them: some of these take a year or two to be filled, during which the water of the neighbouring Tanks and Wells may be vitiated and become unfit for use. I am not prepared to state how far it does not even contaminate the air about the place, but nothing can be more offensive and disgusting to the feelings generally, than a residence in such a neighbourhood at the time.

IV. The practice of allowing people indiscriminately to dig holes and pits, for raising the floors of their huts and other purposes, and allowing these holes to remain open or half filled with all the refuse and nastiness of the neighbourhood, is another serious source of evil, both as regards drainage and atmospheric purity.

V. I have said that the drains are kept in tolerably good condition, but they cannot do much good to the inhabitants so long as private tattees and privies are allowed to remain on both borders of them in rows, in which the contents accumulate, and are periodically let off into the same drains to be washed away by the rain.

In the Suburbs of Calcutta, the drains are badly kept—water does not find its free passage in them, and amongst crowded gardens, full of marshy places surrounded by jungul, the free circulation of air is prevented, while the decayed leaves and vegetable substances thrown into the stagnant water create Malaria and produce Fever. I have seen that few of the laborers, peasants and poorer class of people living in the Suburbs, escape its effects, and even the higher class of people are attacked with it, and a large portion of them fall victims to it.

Those who cannot afford preventive means, such as covering of the body, raised bed, &c., and are obliged to live upon succulent vegetables, lie on the damp ground, are bare-footed, and bare headed, suffer more, and the Fever becomes frequently general and epidemic in certain spots.

The state of the Public Tanks.

River Water.

State of the Drains.

Half-filled Tanks.

Filling up Tanks with dirt, for the sake of rentable ground, and the consequence of the practice.

Digging holes and pits for various purposes condemned.

The Town can never be rendered healthy as long as measures are not taken to remove the filth, dung, &c.

Suburbs of Calcutta are very unhealthy.

The people residing there liable to the Fever to a great extent.

The reason why great numbers of the Lower class of People come to Calcutta and Suburbs.

How they live while in Calcutta.

Description of Lodgings.

The situation of the Poor and Stranger when sick.

The conduct of the persons under whose protection they live.

How they are got rid of.

Unterjule, or depositing a sick man on the bank of the river.

People from various parts of Bengal come to Calcutta to seek for employments, to beg charity and assistance from their friends and acquaintance, and for speculations.

They come and live with persons who are employed in offices, and workmen, and those who follow menial professions, and whose means are very limited. If they are able or willing to live separately, they hire lodgings in some hut or old building, the small apartments of which are let from 2 annas to 2 rupees a month. These people do not possess a sufficient quantity of clothing; they are naked almost day and night; they have no bed, and lie down on mats and leaves spread on the damp ground in their cells or holes—in hot weather they sleep out in open places, and on the borders of the road, exposed to the weather, and all its changes.

When they get Fever or Cholera, they have nobody to attend on them nor have they any means to procure Medical aid, clothing or food suitable to the state of their health. If it is Fever, it increases and becomes violent day by day: many cannot afford to buy even a dose of *Panchun*,* which costs but one pyce, and even if the people of the house or their neighbours give him pyce enough to purchase it, they have neither place nor means to prepare it; and destitute of all the comforts and necessities of life, their illnesses soon arrive at a stage in which their recovery must be considered doubtful, and always dangerous. While they are without any care and attention being paid to them, exposed to the vicissitudes of atmosphere, with nothing but unwholesome water for drink.

The friends of the miserable being with whom he lives, or at whose place he hires his lodging, finding his case bad, become alarmed, send for a Bydai† to prescribe for him. Because the landlord or host now becomes involved in another difficulty: he cannot attend himself to the sick, and neither has or can give means to take proper care of him, and therefore to get rid of his sick tenant or guest, these are the modes usually resorted to: he procures him either a boat or dooly to carry him to his family, in the country, which he never or at least seldom reaches. By the shaking and agitation he receives in his weak state, exposed to the weather, he soon dies. I have seen boatmen and bearers often put down such men on the ghats and bank of the river, &c., where in a few hours they have expired, or are often attacked by beasts of prey before they cease to breathe.

2d. The second and more convenient mode adopted in Calcutta for disposing of such men, is to carry him to the bank of the river, and there to place him under the charge of some hired people at the ghat of the river, waiting his dissolution.

This mode is considered more convenient and less expensive both for the deceased as well as the persons to whom he was attached. Another reason for this also is the well known Hindoo belief, that when a sick man considers that he has no hope left of being recovered, he had better die by the holy stream. Allowing the sick to die in his cell, and throwing his body into the stream, is reckoned infamous and disgraceful both to the survivors and friends of the deceased, and cruel and unbecoming in the persons with whom he has lived.

* The commonest and cheapest Native remedy.

† Native Doctor.

But if he dies on the bank of the Ganges there is some consolation for his family and friends, and at the same time it saves the landlord or his host from the reproaches, which might otherwise be poured upon him by the friends who think that they have done all that could be offered to a man in a dying or distressed situation. They are supposed to have administered him medicine, supplied him with food, and have done the last service a dying man requires, and at the same time not suspected of having robbed the deceased of his property. For if his friends or his landlord allow him to die in the house they are afraid of being annoyed by the Police, who would come to investigate the cause of the man's death, and make enquiries as to whether he had left any property, before they would allow the dead body to be removed. It is not always an easy task to get rid of the Police men without some trouble and expence. Besides nobody but persons of his own class or caste could or would touch the dead body, much less dispose of it.

It is to these circumstances that the *Unterjale*, or Ghaut Murder, owes its derivation, about which so much has of late been said in the Calcutta papers.

To save people of this description and those whose cases prevent them attending at the existing Institutions for medical aid, a place in the central part of the Native Town has long been wanted. I mean a Hospital on a moderate scale to receive houseless and friendless and sick Natives, in which they can obtain common medical aid and attendance, and a temporary asylum during convalescence.

The little Hospital attached to the Medical Class of the Sanscrit College, lately abolished by order of Government for the sake of the new Medical Institution, did considerable good as far as its limited means allowed; and I am persuaded that an establishment of this kind, founded on such a principle and conducted under such an arrangement as would guard against any invasion upon the religious scruples and prejudices of the sick, will be highly beneficial, and recognized as a blessing conferred upon the people. The expence in the beginning will be trifling, and the respectable Hindu inhabitants of the Town, when they understand fully the principle of the Hospital, and are able to measure the good done by it, will come forward to give both donations and subscriptions liberally. I cannot close these hints without offering to Baboo Ramcomul Sein my best thanks for his prompt and valuable assistance in furnishing me with the minute information respecting the feelings of the Natives, especially the Hindoos, on the subject of Hospital discipline, and the reason for their present dislike to avail themselves of our treatment and care: he has executed his task so completely, that I have had little left to do to arrange and bring together what he supplied.

The benefit of dying on the bank of the Ganges.

Why the poor and sick are left at the ghauts of the Ganges.

Conduct of the Police.

Difficulty on disposing or removing the dead.

Hindoo Hospital of the Sanscrit College.

A. R. JACKSON.

NOTE FROM MR. BRAMLEY TO MR. MARTIN'S ADDRESS.

I have been favoured with a sight of your Memorandum, containing a proposal to establish a separate Fever Hospital as a branch of the Native Hospital.

The only paragraph on which I need offer an opinion is, that which refers to the value and importance of such an Institution, as a source of practical instruction to the pupils of the Medical College.

In educating the pupils under my charge, I shall always consider that their usefulness will depend on the extent of their practical acquirements, and in proportion to the means afforded me of qualifying them in this department of medical knowledge, will, in a great measure, be their efficiency as practitioners. Under this impression, I can have no hesitation in saying that an Hospital for the treatment of the patients *labouring under the prevailing acute diseases of Bengal*, so situated as to be available as a source of the practical instruction, would (over all other Institutions) be likely to prove of the utmost value to the pupils, and go far toward securing the success of the Medical College.

I may add for your information, that, on the question respecting the importance of providing the means of practical instruction for the pupils of the Medical College, being brought to the notice of Government, it was resolved to appropriate a portion of the premises lately occupied as the Petty Court Jail to the Police Hospital. This arrangement was proposed by the Chief Magistrate, in consequence of the inconvenient distance *at which that Hospital* is at present situated. I need not say I cheerfully concurred in the proposal, but had I known that it was in contemplation to have recommended the establishment of a Native Fever Hospital, I could readily have shewn the *superior advantage* to be derived from this Institution over the Police Hospital, as regards its proximity to the Medical College.

M. J. BRAMLEY.

Calcutta, }
19th May, 1835, }

Appendix (B)

CONTAINING

THE

CORRESPONDENCE OF THE COMMITTEE

ON THE

FEVER HOSPITAL

AND

MUNICIPAL IMPROVEMENTS

WITH THE

GOVERNMENT OF BENGAL.

Contents of Appendix (B.)

- No. 1.**—Letter from the Governours of the Native Hospital, dated 1st June, 1835, to the Honourable Sir C. T. Metcalfe, Governour General in Council.
- No. 2.**—Minute, D. M^c Farlane, Esq. dated 1st September, 1835.
- No. 3.**—Letter, J. H. Patton, Esq. (Magistrate of the 24 Pergunnahs) dated 28th April, 1836.
- No. 4.**—Letter from J. R. Martin, Esq. dated 30th April, 1836 to Mr. Secretary Mangles.
- No. 5.**—Letter from Lord Auckland to J. R. Martin, Esq. dated 24th May, 1836.
- No. 6.**—Letter from C. W. Smith, Esq. Chairman of the Sub-Committee of Governours of the Native Hospital to Lord Auckland, dated 10th June, 1836.
- No. 7.**—Lord Auckland's Reply, dated 21st June, 1836.
- No. 8.**—Letter from C. W. Smith, Esq. Chairman of the Fever Hospital Committee to Lord Auckland, dated 7th October, 1836.
- No. 9.**—Letter from Mr. Secretary Mangles to C. W. Smith, Esq. conveying Lord Auckland's Reply, dated 22nd November, 1836.
- No. 10.**—Letter, Mr. Secretary Prinsep to the Fever Hospital Committee, dated March 29th, 1837, transmitting a Letter from the Hindu Medical College Council to Government on the subject of erecting the Fever Hospital near to the Medical College and uniting it with the College, forwarded by Government through Mr. Secretary Prinsep to the Committee on the Fever Hospital and Municipal Improvements.
- No. 11.**—Letter from Mr. Secretary Mangles to the Secretary of the Committee on the Fever Hospital and Municipal Improvements, dated 18th April, 1837, transmitting a communication of Mr. M^c Farlane's to Government on the subject of the Petition of Mr. Harris, together with a Report by Lieutenant Abercrombie, with connected Papers on the subject of the frequent Fires.
- No. 12.**—The Committee's Report to Government on the late Fires, dated 18th May, 1837, with connected Papers.

APPENDIX (B.)

No. 1.

TO THE HONOURABLE SIR C. T. METCALFE, BART.

Governour General of India in Council,

&c. &c. &c.

Fort William.

HONOURABLE SIR,

We respectfully beg to lay before your Honour in Council, a copy of our Proceedings and Resolutions at a Special Meeting of Governours of the Native Hospital, called together for the purpose of taking into consideration certain Papers submitted by Mr. Martin, Surgeon to this Institution, on the subject of establishing a Fever Hospital in this City.

We take leave at the same time to transmit Mr. Martin's Paper on the State of Calcutta and its Suburbs, &c.

We have the honour to be, Honourable Sir,

Your most obedient and humble Servants,

(Signed)	{	Edward Ryan.	C. W. Smith.
		Daniel Calcutta.	R. Saunders.
		J. P. Grant.	C. R. Barwell.
		T. B. Macauley.	B. Harding.
		T. C. Robertson.	H. M. Parker.
		C. Morley.	J. Swiney.
			S. Nicolson.
			J. Young.

CALCUTTA NATIVE HOSPITAL,
1st. June, 1835.

No. 2.

MINUTE BY MR. D. M'FARLANE,

Chief Magistrate.

1st. Despairing of being able to form a Report in unison with my brother Magistrates in reply to Mr. Mangles' Letter of the 16th June last, on the subject of Mr. Martin's Paper on a Fever Hospital and Medical Topography, I am induced to record the following Minute; conceiving the subjects noticed to be of the greatest intrinsic consequence, and deserving of the best consideration of all parties in any manner bound to consult the interest of the Town's people.

2d. I am of opinion that an Hospital to which the Natives could be induced to resort, in the numerous cases of fever, which occur in this Town, would save many lives; and it is impossible not to desire to see it established.' The methods of managing it would require careful adjustment; for it is not to be concealed, that Hospitals for the collection of large numbers of sick persons are foreign to the habits of the people, and hardly any method of management would make them popular, except among the very poorest of the people.

3d. Moreover it should not be forgotten, that the Police Hospital is an Institution which provides for this lowest class (when brought very low) as a Police arrangement, at the expense of Government, and I could devise a plan that would enable the charitable among the Publick to send patients there at an extremely small expense.

4th. The plan of raising funds, discussed at the Publick Meeting, is not, I presume, proposed for report on the present occasion.

5th. *Conservancy Improvements.* I concur in nearly all that Mr. Martin has said of the offensive state of many of the Drains of the Town—of the unwholesome narrowness of the Streets, in the densely populated Native parts—of the filthy habits maintained, even by opulent persons, in regard to the interior of their dwellings and premises—of the extensive improvements required in the Suburbs, in the way of forming new, and handsome, and filling up old and offensive Tanks. I have especially noticed some of these points in a printed Paper, styled "Proposals for an Improved Management of the Conservancy Department;" and consider Mr. Martin has done service by bringing the weight of his Medical experience to stimulate the Publick to increased attention to these points.

6th. It must always be borne in mind, that the soundest Medical theories, seconded by other most philanthropic exertions on the part of the Government, would not suffice, under the sacredness which our laws attach to private property, and the full enjoyment thereof, to bring about the improvements which are required. The Publick mind must be enlightened on the subject—half of what is required to be done, may be done by individuals on their own premises—and that half, no laws would suffice to execute, against the will and feelings of the people.

7th. The attention of the Medical profession being turned to this subject is, therefore, of the first importance. By having access to heads of families, under the excited feelings caused by sickness and death among their relatives, they can more effectually, than any others, rouse persons, in easy circumstances, to effect what is required in their own premises, and to demand the execution of what is required from the Publick.

8th. As sound notions on these subjects come to pervade the mass of the people, improvements would gradually and quietly be effected; which, in the absence of such notions, would savour of tyranny. and would undoubtedly rouse the feeling of the people against the improvements themselves.

9th. The great use of the Police Committee, which I am anxious to see established, would be to point out, in unambiguous language, not only the evils which the Community most desired to remedy, but the extent to which Government could go in raising from the people the means to carry these remedies into effect. Mr. Martin's allusion to a liberal Government, refers rather to what the Government would do, if it had the means, than to what it is now able to do.

10th. There are a few of Mr. Martin's remedies on which, I presume, much stress would not be laid—such as the prevention of rice cultivation near the Town; the cutting down of bamboos; the removing markets and slaughter houses to the River bank; the construction of open Sewers in the line of the prevailing winds;—the reports of a Police Surgeon on habitations, sewers, streets, roads, and tanks. But on the

beneficial tendency of the bulk of his most important suggestions, there can be no difference of opinion—the real question is, how to enlist the feelings of the Community in favour of the subject, in such a way as to secure the funds, and the co-operation necessary for the attainment of the remedies suggested.

11th. Mr. Martin reports Captain Forbes as having said, that an annual surplus revenue, above present income, of Sicca Rupees 40,000 or 50,000 would be sufficient to effect the improvements required. That sum would of course do something; but a glance at the expense of every sort of improvements, will shew how little way it would go. The Lottery Committee expended in thirteen years thirty five lacs—the Wellington Tank cost Sicca Rupees 229,000—three-quarters of a mile of road proposed to be carried through the Burra Bazar was estimated, in 1822, to be likely to cost Rupees 220,000—a small Tank lately dug in the Chitpore Road cost Rupees 11,000—Captain Thomson's late plan of Sewerage was to cost six lacs, or three years income of the amount spoken of by Captain Forbes.

12th. In my Letter to Government of the 11th of December, 1834, I shewed Government that a saving of Rupees 60,000 per annum had been effected in the charges on account of the Police in its different branches, for three years from 1831-32. If this sum were granted by Government it would effect something.

13th. In the same way, I have no hesitation in saying, that extensive reductions in the establishment of the Police might be made. In a Town, where a tax of five per cent on rental produces, for Municipal purposes, only about two lacs of net revenue, it is wholly preposterous that Rupees 96,000 should be expended on the salaries of a paid Magistracy. Rupees 50,000 would provide an abundant establishment; and if the difference, as well as the amount of other reductions that might be made, were granted to purposes of improvement, a substantial boon might be bestowed on the people.

14th. But I feel that it is in vain to argue upon this subject. From apathy, and disinclination to encounter changes that might possibly lead to increased assessments, the Publick are not to be excited into active exertion on this question. A few more Papers like Mr. Martin's, and especially a few well authenticated Medical Reports of positive injury to life or health, resulting from publick or private nuisances, will perhaps effect something.

(Signed) D. M' FARLANE,
Chief Magistrate.

I entirely concur in the whole of the Minute.

(Signed) { RADAKAUNT DEB,
J. DWARKANAUTH TAGORE,
J. KYD.

September 1st, 1835.

No. 3.

To R. D. MANGLES, ESQ.,
Secretary to the Government of Bengal.

SIR,

Judicial Department.

I have diligently perused the documents submitted with your Letter of the 16th June last, and find the subject contained in them so ably treated, in a Medical point of view, by Mr. Surgeon Martin, and the remedy required for the existing evils, so warmly advocated by the Governours of the Presidency Native Hospital, that any remarks from me would only prove a repetition of the matter already advanced in the course of the correspondence.

2d. I shall content myself with observing, that the state of the Suburbs loudly calls for the introduction of a system of Draining, Levelling, and Clearing, without which expedient, it is in vain to expect any decisive and lasting improvement in the healthiness of the City. But how that system shall work—whence are its resources to be derived—and under what superintendence are to be placed its beginning, continuation, and end—are points, which can alone be determined by a liberal and intelligent Government.

3d. To expect Natives voluntarily to contribute their labour and means in furtherance of this object, though so essentially momentous to themselves, is out of the question. Their indolent and penurious habits, backed by their belief in the doctrine of predestination, and their supine resignation to the decrees of fate, operate powerfully to check the direction of their disinterested energies towards it, or the improvement of their condition in any way, particularly when such involve the smallest item of expense. The power, then, of conferring this inestimable blessing on the British and Native inhabitants of Calcutta, and its environs, would seem to rest in the hands of the Government alone; which, in consideration of the incalculable good it involves, the Right Honourable the Governour General of India in Council might see fit to authorise at the publick expense; all practicable portions of the work being accomplished through the instrumentality of large gangs of convicts acting under the direction of experienced superintendents.

4th. I deprecate the displeasure of the Government, when I remark, that it has been matter of much surprise to me that the labour of the convicts of this Division has been devoted of late to operations at a distance, when their services would have been so advantageously employed in the vicinity of home—particularly when it is remembered that position is the seat of the local Government, the emporium of the first magnitude in the Eastern world, and the residence of nearly a million members of the family of man! The greater portion of the work so urgently required, could be primarily effected by their means, without an iota of extra expense to the Government—a matter of too much importance, I trust, to be disregarded, notwithstanding its agitation at this late hour.

5th. In connection with this subject, I beg, in conclusion, to draw your attention to my predecessor's Letter of the 8th of January, 1835, addressed to Mr. Secretary W. H. Macnaghten, relative to the establishment of a Dispensary and Hospital at a convenient spot between Allipore and Kidderpore, for the relief of the indigent sick, to which no reply has been received.

I am, &c.

ZILLAH, 24 PERGUNNAHS,
 April 23th, 1836.

(Signed) J. H. PATTON,
Magistrate.

No. 4.

To R. D. MANGLES, ESQ.,

Secretary to the Government of Bengal.

SIR,

Calcutta, April 30th, 1836.

My situation of Surgeon to the Native Hospital having afforded me extended opportunities of observing the condition of the health of the great mass of Natives inhabiting Calcutta and its Suburbs, and finding the inadequacy of the Institution over which I preside for the relief of yearly increasing applicants, I last year presented to the Governours of the Native Hospital a Memorandum on the subject of establishing a Fever Hospital, in order to meet the increasing wants of the Community. A Special Meeting of Governours was accordingly held on the 20th May, 1835; when the question having been carefully considered, the Governours were pleased to order that the proceedings of the day should be printed, together with the several documents submitted by me; and that a copy, with a letter from the Governours should be forwarded to the Honourable the Governour of Bengal; who was pleased, on receipt, to direct that similar copies should be handed to the several Magistrates of the Town and Suburbs, with orders to report on the actual state of their respective divisions.

What resulted from this I do not know. But the great and increasing importance of the subject, as regards the health and prosperity of this City, induces me to solicit that you do me the favour to submit the enclosed copy for the consideration and orders of the Right Honourable the Governour of Bengal.

The Notes on the state of Calcutta are added as an appendix to the proposition for establishing a Fever Hospital, and to shew, in a plain and brief manner, the actually existing state of the Native portion of the Town and its Suburbs. I can assure his Lordship that what I have said on the subject is far from being over-rated: it is I believe much under the truth, for it is not in the power of any one individual to fathom all the misery existing over such a vast superficies.

If more particular information be desired on this head, I would most respectfully submit the names of the following gentlemen, as qualified by habits of thought, and opportunities of local observation, to throw much useful light on the question. And if an experience in some of the worst climates in India, and a residence in, and personal knowledge of Calcutta during ten years, may be allowed to give me any advantages of information, I am most willing to serve in any manner that the Right Honourable the Governour of Bengal may be pleased to require.

The names of the gentlemen alluded to are as follow: viz.

Mr. C. W. Smith, Mr. James Prinsep, Captain Forbes, Mr. James Kyd, Dr. James Rankin.

I have the honour, to be,

Yours, &c.

(Signed) J. R. MARTIN,

Presidency Surgeon and Surgeon of the Native Hospital.

No. 5.

To J. R. MARTIN, ESQ.

SIR,

Government House, May 24, 1836.

I have to acknowledge the receipt of a Letter from you, enclosing a Memorandum and Papers upon the proposed establishment of a Fever Hospital—upon the present state of the Native portion of Calcutta—and upon the best means of promoting the comfort and health of its inhabitants. I will very cordially support the views with which those papers have been sent to me. The Hospital will do good; but alone it will be quite inadequate to the correction of the evils which you have so forcibly pointed out. I trust that Dispensaries will be attached to it—that Medical aid will be largely given to the poor at their own houses—and that the plan will be made available as a means of extending Medical education—of gaining local experience and knowledge in the treatment of Epidemic Fever, and ultimately, perhaps, of improving such habits amongst the people as are most injurious to health.

As soon as the plans of your Committee shall be more matured, I shall have great pleasure in laying them before the Government; but at the same time I must be permitted to say, that I see with some regret in this City the habitual, and almost entire, reliance upon the Government for very many of those works of Charity which in our own country are founded, and warmly adopted, and permanently supported, by the liberality and under the operation of the humane sympathies of individuals. It is satisfactory that the distinguished names of those Native gentlemen, who are always forward with their purses, and with their exertions, in works of kindness and of public utility, should be upon the list of subscribers; but it is mortifying that their number should be so small, and that the assistance given to an undertaking so eminently deserving of the best encouragement should be so limited. I should be glad indeed to find this assistance yet extended; and that the aid required from the revenues of the State will not be beyond what may be needed in furtherance of the first foundation of the Hospital, and that ample and permanent means may be secured for its future maintenance. Independently of other reasons, I wish this because I do not think it in any way advantageous that in the details of managing such establishments the Government should maintain a perpetual right of interference, and a responsibility of which it can but imperfectly acquit itself.

Your plans do not stop with the establishment of an Hospital, but extend to the formation of Local Improvements, and to an endeavour to remove or mitigate the natural causes of contagion of disease. Your Letter does not point out by what means it is proposed that the desired improvements of this kind shall be effected. But I cannot think it just, that for such objects, not of benevolence only, but of general advantage, and almost of paramount necessity, the liberal alone should be called upon to contribute; nor would I willingly see applied to purposes so special, and so local, any large portion of the general revenues of India. It would be most satisfactory to me if I could see founded on the propositions which have now been brought under discussion some plan of judicious and adequate Local Taxation, and independent Local Management, in the direction as in the burdens, of which, all who might be most interested should take their share.

The recommendations which I should offer upon these subjects is, that in the first instance a Committee of the persons best informed, and the most willing to contribute their exertions, be formed for the purpose of preparing a specific plan and estimates of

a Fever Hospital and Dispensaries, and of considering the many suggestions which have been made for Local Improvements in the City and its Suburbs, and with the view of exhibiting full statements of the nature and cost of the improvements, the adoption of which they may think the most expedient and practicable; and if the aid of the Government Officers should be required in the constitution of the Committee, or in furtherance of its investigations, you cannot doubt that it will be readily afforded. I will beg you to communicate this Letter to Sir Edward Ryan, and to the other gentlemen who compose the Sub-Committee of Governours of the Native Hospital, and

I am, very faithfully,
(Signed) AUCKLAND.

No. 6.

TO THE RIGHT HONOURABLE LORD AUCKLAND,

Governour of Bengal.

MY LORD,

The Sub-Committee of the Fever Hospital having been put in possession of your Lordship's Letter of the 21th ultimo, I am desirous to offer their respectful acknowledgments for the expressions of lively interest, and for the very valuable suggestions, with which you have been pleased to favour them.

In the promise of your Lordship's powerful support to the objects for which the Committee was formed they feel an assurance of ultimate success, which the much to be lamented apathy of the Native Community had well nigh made them forego.

The Committee are on the point of circulating Subscription Books throughout Calcutta, with an appeal to the European Community; and so soon as the result of the appeal shall have been ascertained, they will then lose no time, in conformity to your Lordship's wishes, in submitting plans and estimates of the Hospital to your Lordship, for the purpose of being placed before the Government. In regard to the still more extended and important object of improving the Town of Calcutta and its Suburbs, and of adopting efficient measures to remove the many sources of disease which exist in every quarter, the Committee most respectfully tender their fullest concurrence in the measures which your Lordship has suggested for that purpose, in the formation of a Committee to obtain the necessary information, and to draw up a plan of judicious and adequate Local Management and Taxation.

In the furtherance of an object which promises to be attended with such lasting benefits, the gentlemen forming the Sub-Committee, who were selected by the Public Meeting of inhabitants, assembled on the 18th June, 1835, request I will intimate their readiness, in conjunction with any such additions to their body as your Lordship may be pleased to appoint, to apply themselves to the attainment of the requisite information, and the preparation of a Report and estimate, upon which the proposed plan of Local Taxation may be framed, and the extent of the funds requisite accurately determined.

Should your Lordship approve of the proffer of their services, the Committee propose to commence their inquiry by circulating sets of queries respecting the local causes of disease, and the best means of removing them, to all the best informed residents of the Town and Suburbs; to collect together much valuable information on the subject in the shape of statements, and papers, and statistical accounts, which they understand to be extant; and to conduct such further local inquiries as may be requisite, whether as relates to the condition of the several portions of the Town, or the nature, amount, and mode of collecting the present house assessment; and after having arranged and collated their materials, to submit a Report of the whole for your Lordship's consideration.

NAMES OF THE COMMITTEE.

Honourable Sir E.
Ryan, Kt.
Honourable Sir J.
P. Grant, Kt.
Lord Bishop of
Calcutta,
Dr. S. Nicolson,
Dr. J. R. Martin,
Dr. A. R. Jackson,
Bahadur Dwarkanath
Tagore,
Bahadur Ramconul
Sen,
Bahadur Russomoy
Dutt,
Bahadur Rajchunder
Doss,
Bahadur Rustomjee
Cowasjee.

The Committee desire me to express their thanks to your Lordship for the offer of the assistance of the Government Officers; and as the Committee anticipate occasions in which the assistance of the Publick Officers may be needed by them, I am directed to request, that your Lordship will grant them authority to call upon all those Officers whose aid may be required in the progress of their investigations.

COMMITTEE ROOM, CALCUTTA,

June 10th, 1836.

I am, My Lord, &c.

(Signed) C. W. SMITH,

Chairman to the Sub-Committee.

RESOLUTIONS passed at the Meeting of the Fever Hospital Committee on the 3d June, 1836, and inclosed in the Chairman's Letter of the 10th June, 1836, to Lord Auckland.

Resolved, " That a suitable reply be transmitted to the Right Honourable Lord Auckland, expressive of the sense of the Committee of the Fever Hospital of the valuable and important communication contained in his Lordship's Letter of the 24th ultimo, recommending that a Committee of the persons the best informed, and the most desirous to contribute their exertions be formed, for the purpose of preparing a specifick plan and estimates of a Fever Hospital and Dispensaries."

Resolved, " That, as the Subscription Books are on the point of being circulated throughout Calcutta, the further consideration of the detail of a plan and estimates for the Fever Hospital and Dispensaries be postponed, until the sense of the European Community shall have been ascertained, when the plan and estimates in question, together with a statement of the funds, will come under consideration; and a communication on that subject be made to the Governour General, for the purpose of being laid before Government."

Resolved, " That the present Committee, having been appointed by the Meeting of the 18th of June, 1835, for the purpose of carrying the object now contemplated into effect, will intimate to his Lordship their readiness, along with any such additions to their body as the Governour General may appoint, to apply themselves to the attainment of the requisite information, and the preparation of a Report, upon the subject of a judicious, and adequate plan of Local Management and Taxation."

Resolved, " That mean while the Committee will prepare a form of address, and a set of queries, for the purpose of being circulated among all those residents of the Town and Suburbs who have it in their power, or shall be willing, to give local information, or papers, and documentary evidence on the state of their respective neighbourhoods; and that the Committee do anticipate the necessity for availing themselves of the assistance of the Government Officers, which his Lordship has offered to place at their disposal, in furtherance of the investigation."

Resolved, " That Dr. Jackson be authorized to entertain an efficient Establishment, at a cost not exceeding Rupees One Hundred per Month, and such additional peons from time to time as may be necessary; and, further, that he may be provided with stationary to the requisite extent."

Resolved, " That Mr. Stoequeler having kindly offered to assist the Committee gratuitously in printing any Papers they may require, such offer be accepted with due acknowledgment."

Resolved, " That the Committee be again assembled, when the reply of the Governour General shall have been received."

(Signed) C. W. SMITH,

Chairman.

No. 7.

To C. W. SMITH, ESQ.,

&c. &c. &c.

Government House, June 21st, 1836.

SIR,

I have to acknowledge the receipt of your Letter of the 10th instant, on behalf of the Sub-Committee of the Fever Hospital.

I have heard with pleasure the intention of the Committee to persevere in their meritorious exertions for the purpose of effecting the establishment of a Fever Hospital in Calcutta, and can only repeat my assurance, that as soon as the plans and estimates in contemplation shall be laid before me, I shall give them my best attention, and shall submit them without delay for the consideration of the Supreme Government.

I am grateful also to the gentlemen of the Committee, for the willingness expressed by them to undertake the more difficult and important task of endeavouring to frame such a plan of Local Management and Taxation, for matters connected with the health, the comfort, and the improvement of the Town, as may be best calculated to secure efficiency, and general confidence in the application of the funds collected.

The Committee have kindly submitted to me the question of making additions to their body, and many names have occurred to me of gentlemen who from their acquirements, and the general estimation in which they are held, might well take part in their deliberations—but the present Committee were named at a Public Meeting, with general consent; whatever of information or suggestions can be contributed by others, may be brought before them in the form of Evidence, and I doubt whether their consultations would be more effective from being more numerously attended.

Having in view the present constitution of the Committee, and the purposes for which it is associated, it has only occurred to me as desirable to add to it some of the European gentlemen of the Town, who are wholly unconnected with the Government. Mr. Cockerell and Mr. A. Rogers, having, at my request, consented to afford the benefit of their assistance to the Committee, I avail myself of the offer in your Letter to name them as colleagues, whose co-operation may be expected to be highly useful.

I have only to repeat my thanks to the Committee, and to state that they may be assured that every assistance required from the Publick Offices will be readily given to them in the task which they have with so much publick spirit undertaken.

I am, Sir,

Your obedient Servant,

(Signed) AUCKLAND.

No. 8.

TO THE RIGHT HONOURABLE LORD AUCKLAND,

Governour of Bengal.

MY LORD.

In compliance with the gracious invitation conveyed by your Lordship's Letter of the 20th June, 1836, I have now the honour to submit, for the consideration of your Lordship, the result of the exertions made by the Committee in regard to one of the subjects entrusted to them—the institution of a Native Fever Hospital for the treatment of the prevalent diseases of the country.

2. When the necessity for an Establishment of this nature was laid before the Publick by those gentlemen, who from their situations and their profession at present were the best qualified to form a sound judgment on the subject, and after their unanimous testimony had been corroborated by the most intelligent of the Native gentlemen of Calcutta, it was finally resolved at a Publick Meeting held upon the 13th June, 1835, that an appeal should be made in the first instance exclusively to the Native Community, since it was not doubted, that by the active co-operation and support of many of the wealthier Native gentlemen, who stood forward at that Meeting, ample funds for an Institution devised solely for the benefit of the poorer classes of their countrymen would be obtained.

3. Conformably with this Resolution, Subscription Books were printed, and copies of them distributed to all those Native gentlemen who had shewn a readiness to promote the object, and they severally undertook to invite donations and subscriptions, each in his own section of the City.

4. After every possible exertion had been made by the Committee, and so long a period had elapsed, that any hope of advantage from a further delay could no longer be entertained, the Committee held a meeting, and ascertained that the Native subscriptions amounted only to Sixca Rupees 31,000.

5. It was then resolved by the Committee to make an earnest appeal to their Christian brethren; and every possible means has been adopted by the Sub-Committee, to which this branch of the inquiry had been committed, to circulate books and obtain subscriptions for the Hospital.

6. Upon the 19th ultimo the Committee again met for the further consideration of this subject, when they found the total amount of subscriptions to be as follows—

	Donations.	Annual Subscriptions.
Native Subscriptions.....	34211 0 0	17 0 0
From Europeans and other deno- minations of Christians.....	8361 0 0	2550 0 0
Total,.....	42572 0 0	2567 0 0

7. Although the Committee have failed in calling forth that general interest and support from the mass of the Native population which, in a plan having so great a publick benefit in view, they had every reason to expect, and had indeed been led to anticipate from the representations of many influential Native gentlemen, and although the amount of the subscriptions falls far below that sum which would render it safe to open an Hospital, yet they do not doubt, after the assurances they have been honoured with from your Lordship, that an Institution which holds out such abundant anticipa-

tion of usefulness, and which appears so urgently necessary to administer Medical aid to thousands of poor Native residents of the Town and Suburbs suffering from fever, and the other more prevalent diseases of the country, and to rescue many of them from death, will be deemed worthy of support from Government.

8. The Committee feel some hesitation on offering any suggestions as to the mode in which that support should be given, particularly as your Lordship intimated a reluctance to the Government occupying towards the Fever Hospital that relation which it bears to the Native Hospital—that of being the principal subscriber, and referee upon all occasions of dispute or collision.

9. After having availed themselves of the professional advice of their colleagues, Drs. Nicolson, Martin, and Jackson, and after having maturely weighed the subject, they find that they could not open a Fever Hospital at all commensurate with the general exigencies of the Native community, without an income of Rupees 1000 per mensem, a house and premises for the Hospital, and medicines.

10. Upon referring to the records of the Native Hospital, they find that the commencement of that highly useful and now prosperous Institution was not much more promising than that of the Fever Hospital.

11. In the year following its Institution, the subscriptions were only Rupees 54,000; and on that occasion, from the want of adequate funds, it was found necessary to rent a house, the premises in Durumtollah not having been purchased till some years after, when increasing subscriptions and bequests enabled the Governours to incur that expense.

12. The Committee are inclined to believe that the reason which has induced the Natives generally to hold back on this occasion is partly their characteristic apathy, and partly the difficulty with which they are induced to believe that any beneficial undertaking in which their interests alone are involved will take effect, until they actually see it commenced. The Committee have had a remarkable proof of the prevalence of this feeling, in the terms of the Draft given by Baboo Madob Dutt for his subscription of Rupees 1000, in which he has inserted the following proviso, “If the Hospital is not commenced within twelve months this sum is to be returned to me.”

13. The Committee are on many accounts induced to anticipate, that, when the Hospital is fairly set on foot the Natives will tender much of that aid they have for the present withheld. And, should their expectations be fulfilled, it appears to the Committee that the amount of the aid given by Government may be gradually and proportionally diminished; but for the present they would venture to solicit, that, after deducting the income arising from the aggregate sum of donations and annual subscriptions, which may be assumed as (though it is barely) Rupees 400, such assistance might be afforded by Government as would enable them to commence with the advantages and upon the scale laid down in Par. 9 of this Letter.

14. One of the first objects, as it appears to the Committee, is the obtaining a suitable spacious piece of ground in a central position; and, both with reference to health and to the prejudices of the Natives, the Committee feel it of importance that such ground should be as near to the River as possible, and two such situations present themselves in the Export and Import Warehouses; though both of them the Committee are afraid are too valuable to hope for their being so appropriated.

15. In the event of your Lordship deeming it expedient to grant such a piece of ground, the Committee do not contemplate to erect for the present permanent buildings; but with a sufficiently open space of ground affording that perfect freedom of ventilation so essential to such purposes, it is thought that ranges of temporary buildings, well raised and constructed, would be found to answer all present wants.

16. But should your Lordship find it inexpedient to make such a grant of land, the Committee would propose that funds adequate to a purchase of that nature should be placed at their disposal, or that a sum equal to the rent of premises suited to their purpose might be granted, until such time as the subscriptions should enable Government to withdraw this portion of their aid.

17. The only house which the Committee after considerable search have been able to find, which, from its open and well ventilated position, and the size of the premises, and structure of the house, would enable the Committee to open an Hospital without the expense of purchasing ground or erecting buildings, is Drummond's School in the Durumtollah, which the professional gentlemen attached to the Committee have visited, and pronounced to be unobjectionable. These premises are not for sale, but might be rented, they find, for three hundred Rupees per mensem.

18. The Committee have thus endeavoured to place the subject fully before your Lordship, and they beg to assure your Lordship, that the whole of the inquiries into the state of the localities within the City and Suburbs, in which they have been, and are still, actively employed, have only served to convince them more and more of the great extent of mortality, arising from the diseases to which the Fever Hospital is calculated to give material relief, and the urgent necessity which exists for such an Institution.

19. At the same time they feel most fully the paramount importance of introducing those general improvements in the Conservancy and Drainage of this great City, as a preventive of a great proportion of the local diseases, and the present mortality among all classes of the inhabitants; and they direct me to assure your Lordship, that no unnecessary delay will take place in completing them, and in laying their plan for those general improvements, and for a system of local taxation, before your Lordship.

I have the honour to be, My Lord,

Your obedient Servant,

(Signed) C. W. SMITH,

Chairman.

COMMITTEE ROOM,
October 7th, 1836.

No. 9.

To C. W. SMITH, ESQ.,

Chairman of the Committee of Municipal Improvement.

SIR,

I am directed by the Right Honourable the Governour of Bengal to acknowledge the receipt of your Letter of the 7th ultimo, reporting the proceedings of the Committee in regard to the institution of a Native Fever Hospital, for the treatment of the prevalent diseases of the country; and to inform you, in reply, that his Lordship will wait for a further report upon the other objects, which have been submitted to the Committee, before he can admit the propriety of such a grant of money, as has been requested; for it appears to him that the information before him is far from being so complete, as to justify him in coming to a decision upon it.

2. The Report, indeed, states that the funds raised by voluntary contribution are insufficient—that there is at present a general disposition on the part of the opulent Natives, to hold back from such contributions—that the pecuniary assistance of Government is indispensable to the establishment of a Fever Hospital, with further details in regard to the suitable site, and accommodation of such an Institution; but it seems to his Lordship to be deficient, in as much as it does not enter into an examination and a review of the funds already appropriated to charities of this description—of the manner in which they are applied—of the modes which may be suggested for their increase or improved application, and of the relative value of existing institutions. Nor is it so particular as might be wished upon the new Establishment which it proposes to found.

3. In a discussion of these points, his Lordship would gladly have seen consideration given to the advantages to be derived to the general care of health, and particularly for *watching the approach of Epidemick Fever, and providing means of general relief, in case of its prevalence*, from the establishment of one great Hospital, as compared with the benefits which would be afforded at the same expense, by an increased number of Dispensaries.

4. From information which has been laid before his Lordship, it appears that the

Income of 1835-36 from 1st Sept. 1835 to 31st Aug. 1836.

	Co's. Rs.	Co's. Rs.
Donation of Government,.....	12583	5 4
Interest on Govt. securities,.....	10685	14 6
Baretto's Legacy,.....	3680	9 2
Subscriptions & Donations,.....	748	13 9
Dividend, Messrs. Alexander & Co. 499	9 4	
	28198	1 1
Valuation of House rent,.....	3600	0 0
Donations of Government,.....	11150	11 9
Allowance to Medical Officers,...	2400	0 0
Interest of Govt. Securities,.....	531	14 11
	14382	10 8
Grand Total,.....	46,180	11 9

income of the Native Hospital, containing 100 beds, and of the three existing Dispensaries, including a valuation of rent, amounts to Company's Rupees 46,180, of which about 750, or one sixtieth only, was last year derived from voluntary contributions. The income from that source was Rupees 1891, Rupees 532, and Rupees 1152, in the years 1832-33, 1833-34, and 1834-35 respectively. The payments by the Government amount to Company's Rupees 26,434, and the remainder accrues from vested funds; besides these, the Leper

Asylum is supported from the funds of the District Society, at an annual expense of Rupees 6,382.

5. The expenses of the Native Hospital and Dispensaries,

including valuation of House rent, amount to	21,836	0 0
Collingah Dispensary,	8,663	0 0
Gurrunhatta Dispensary,	8,472	0 0

The number of cases in which relief is annually given, may be stated at,

Native Hospital House,...	1,020	0 0
Occasional,	75,000	0 0
Vaccine,	486	0 0
	76,506	0 0
Collingah Dispensary,	83,000	0 0
Gurrunhatta Dispensary,	78,000	0 0
	161,000	0 0

The expenses of the Dispensaries include the Allowance to Medical officers—the excess of expenditure over income is made good from the surplus Funds of the Native Hospital.

The occasional cases may fairly be estimated at the Dispensary rates, 1-9 of a Rupee.

The 75, 100 occasional cases therefore of the Hospital could be provided for at the annual expense of 8300 Rupees — leaving 13,500 of the whole expense for the 1020 bed cases for 13 Rupees each.

It thus appears that 76000 cases at the Hospital have cost Rupees 21836; and 161000 at the Dispensaries, Rupees 17135. No doubt, the amount of relief in the case of one patient admitted into the Hospital is very much greater than that which is given in one occasional case; but it will be found, that whilst every case of occasional advice and medicine costs somewhat less than one-ninth of a Rupee, every case brought into the Hospital costs Rupees 13; and it is at least questionable whether 117 cases of occasional relief are not more than equivalent in a poor and crowded neighbourhood, to the more attentive care which in an Hospital is given to a single patient, even though that patient should be labouring under a more acute and dangerous disease than any of the others.

6. It appears by the Report of the Committee, that a Fever Hospital could not be maintained at a less expenditure than Rupees 16000, but possibly a Fever Ward might be attached to the present Hospital at much less expense; and it is clear to his Lordship, that for the same amount three additional Dispensaries might be established and supported; and by attaching others to the Leper Asylum, and General Hospital, seven or eight Dispensaries might be obtained for Calcutta, distributing Medical aid, giving facilities for Vaccination, and recording Nosological information in every quarter of the Town.

7. Without entering minutely into detail, it may also be presumed that the new Dispensaries might be established upon a more economical plan, or by attaching a few beds to each, be made, at the same expense, more extensively useful, than those which at present exist.

8. The European Superintendence of the Gurrnhatta and Collingah Dispensaries costs at present more than Rupees 8000 annually. But the time cannot be far distant, when the services of a well qualified Native Apothecary, at Rupees 6 or 700 may be substituted, as vacancies occur, for the Europeans now employed at Rupees 3,000. The duties of the inspecting Surgeons may in like manner be extended or consolidated, and the expense of each Dispensary on its present scale reduced to little more than Rupees 5,000.

9. The inspection of all the Dispensaries might be entrusted to one Medical Officer of zeal and ability, whose reports, collected from every part of Calcutta, might be submitted to such Board of Health, as it may be part of this plan to establish.

10. But another consideration, which would induce his Lordship to suspend his opinion until he should have received a further Report, is, that of the manner in which it is fitting that the expense of such institutions should be defrayed, and whether the most wealthy amongst those who are to receive benefit from them, may not fairly be led or made to contribute towards them. The Government must naturally be disposed at once to surmount all difficulties and to grant the sum required, and it might, perhaps, be admitted, that in Calcutta, the Metropolis of India, the rising school of its Medical and other Sciences, and the resort of all strangers, greater encouragement to Institutions of this nature may fairly be given, than would be justified in most other places. But it is at the same time the wealthiest of the Cities of India; and with reference to the wants of other places, the assistance to its charitable Institutions, which may fairly be given from the produce of general taxation, must of necessity be closely limited. In the consideration, therefore, of any scheme of Local Taxation, his Lordship may hope that this part of the subject will be fully examined. The system upon which the Dispensaries are at present open is liberal beyond the strict exigencies of charity. Assistance is refused to none. The servants of the wealthiest householder, the workmen of the thriving tradesman, all gratuitously receive upon application medicine and advice. It would not be unreasonable that such aid should be confined to the nearly destitute, and that beyond these it should be given only

to the servants or families of those who subscribe to the Institution. But his Lordship would unwillingly adopt such a change, and narrow, even for a time, the Medical relief which is now so extensively given; and he would gladly see, in any new scheme for local taxation, a portion of the funds to be raised appropriated to these objects. He is the more attached to these views, because he sees in their general adoption the only chance which is open to the Government of generally extending to the great Cities of India similar Institutions; and it seems not impossible that, with extremely light taxation to be locally raised, and locally administered, with the assistance of the Medical, and other publick Officers, and with a liberal supply of medicines from the Laboratory of the Government, Institutions such as those of which an outline has been attempted may gradually be adopted in the Provinces. In illustration of these views it may be further stated, that in Ireland the expense of the 560 Dispensaries supported partly by subscription and partly from the county funds, and which affords relief throughout the country, but little exceeds that of the seven Hospitals of Dublin.

7 Hospitals, 5600.
560 Dispensaries,
6000.

I have the honour to be, Sir,

Your obedient humble Servant,

(Signed) R. D. MANGLES,

Secretary to the Government of Bengal.

FORT WILLIAM,
November 22nd, 1836.

No. 10.

TO THE FEVER HOSPITAL COMMITTEE.

General Department.

HONOURABLE SIRS AND GENTLEMEN,

I am directed by the Right Honourable the Governour General of India in Council to transmit to you the accompanying copies of a Letter, No. 147, from the Secretary to the General Committee of Publick Instruction, dated the 15th instant, and its enclosure, and to request that this Department may be informed of any arrangements that may be adopted or suggested leading to the establishment of Hospitals in the vicinity of the Medical College, and that may be deemed capable of being made subservient to the purposes of Medical Instruction, in the manner recommended by the Committee.

I have the honour to be,

Honourable Sirs and Gentlemen,

Your most obedient Servant,

(Signed) H. T. PRINSEP,

Secretary to Government.

COUNCIL CHAMBER,
March 29th, 1837.

No. 10. (A)

No. 147.

To H. T. PRINSEP, ESQ.,

*Secretary to Government in the General Department,**Fort William.*

SIR,

The Council of the Medical College has submitted to the General Committee of Publick Instruction enclosed copy of a Report, of which the object is to recommend that an Hospital be established near the Medical College, in order that the Pupils may have the benefit of Clinical instruction.

The General Committee, for the reason stated in the Report, considers this arrangement very desirable and necessary, and recommends it for adoption to the Right Honourable the Governor General in Council.

His Lordship will observe, that the intended Establishment of the Fever Hospital is mentioned as an economical means of supplying the want noticed, and the General Committee submits, that the support of Government to this Institution may be made contingent on its location near the Medical College—a double advantage will thus ensue—the Hospital would have the benefit of the science of the College Professors, and the Pupils that of Clinical instructors.

I have, &c.

FORT WILLIAM,
15th March, 1837.

(Signed) J. C. C. SUTHERLAND,
Secretary G. C. P. I.

No. 10. (B)

To J. C. C. SUTHERLAND, ESQ.,

Secretary to the General Committee of Publick Instruction.

SIR,

We beg to submit to the notice of the General Committee of Publick Instruction, the following considerations upon a subject of great importance to the Institution with which we are connected, trusting that if it meet your approval, you will forward our proposal to the Government and favour us with your support.

The time has arrived, when it becomes necessary that the students of the Medical College should enter upon a more practical course of Education connected with their profession, than has hitherto engaged their attention. They have up to this period been employed in laying the foundation of Medical Knowledge by the study of Anatomy, Chemistry, and Pharmacy. They have studied also, to a certain extent, the Principles, and Theoretical part of Medicine and Surgery; and it is highly requisite that they be now furnished with the means of learning at the bedside of the sick those lessons which alone can enable them to become useful Medical practitioners. In this point of view, the late appointment of Lecturers on Chemical Surgery and Physick forms a very important addition to the list of College Professors, but it is unnecessary to tell the Committee, that to render the instruction of these gentlemen available, a well regulated supply of patients should be submitted to their charge, for the express purpose

of illustrating their lectures, and that the most ample opportunities of witnessing disease in every variety, should at the same time be furnished to the pupils. It may be urged, that this has been already provided for by the admission of the students to the General and Native Hospitals of this City, and that these institutions are intended by the Government to supply the requisite means of study in this department of the College. But we are inclined to believe that this arrangement will be found in many respects ill calculated to accomplish the object in view, and that another far more desirable might be adopted.

1st. The Native Hospital being exclusively intended for *surgical* Cases, the students are compelled to attend at the General Hospital for instruction in all *medical* diseases, and to them, perhaps, this class of maladies forms the most important branch of their practical professional studies.

This arrangement however is peculiarly inconvenient, for the great distance between the General Hospital and the College renders it a matter of very great difficulty in this climate for the students to attend at the former with any regularity, whilst the length of the journey backwards and forwards must necessarily occasion a very great waste of time.

2d. The patients in the General Hospital are, without any exception, Europeans, whose maladies differ materially from those of the Native constitution, which, in after life, these young men will, for the most part, be called upon to treat. Though it is undoubtedly necessary, that Medical students be made acquainted with all the various forms under which disease appears, as well amongst foreigners as their fellow countrymen, more especially where the inhabitants of so many nations congregate as in India, yet it would certainly be a very mischievous Medical education which should direct their attention chiefly to the maladies of a class of patients, who may very rarely fall under their notice hereafter, and at the same time leave untaught the characters of disease amongst their own people.

3d. The Native Hospital, moreover, is liable in a minor degree to the objections urged against the attendance upon the General Hospital. Though more conveniently placed than the latter, it is still at a considerable distance from the College, or from that quarter of the City wherein the students reside. Indeed we believe the situation of this Hospital has been considered generally as too remote from the chief Native portion of the Town to provide sufficiently for the wants of the population—consequently it does not contain so many cases of interest to the students as would be presented by one more easy of access to the class of patients who resort to it for assistance. On the other hand, it is manifest that a Hospital established either within the precincts of the College, or in its immediate neighbourhood (as in all the Medical Schools of Europe) would present many advantages of paramount importance, which could be gained from no other locality.

(1st.) It would give to the students the means of practical instruction available the instant they are dismissed from the Lecture Room. In such an Hospital they could become dressers and assistants, and devote the whole of their spare time to its Wards; a very great advantage in this country, where many of the diseases are so rapid as to require constant watching by those who wish to study them with profit, or who desire to benefit the patients under their charge.

(2d.) While engaged in their Hospital duties they could with ease continue such portion of their other studies as may be required from them. The College bell would summon them to Lecture, and the Library and Dissecting Room would be constantly within reach—advantages of which they would be altogether deprived, if they were compelled to attend Hospitals at any distance from the College.

(3d.) To the class of patients who are likely to seek aid from such an Institution, the neighbourhood of the Medical College is evidently a very desirable one. *It is in the heart* of the City, and very convenient of access to the great mass of its inhabitants, as shewn by the crowds who attend daily upon the Dispensaries at that end of the Town. Perhaps no locality could be selected in Calcutta, which is altogether so well fitted for the purposes of a General Native Hospital as the site of the Medical College.

It may perhaps be urged that the Police Hospital (now placed within the walls of the old Petty Court Jail) offers to our students the requisite opportunities for practical instruction.

The character of that Hospital, however, renders it very unfit to fulfil the intention in view, and the class of the patients admitted into its Wards are not those which could be selected for subjects for Clinical instruction. They consist for the most part of wretched objects, pilgrims, beggars, and criminals, the very dregs of society, who seldom claim admission to the establishment until they are reduced to the last extremity either by poverty or sickness. They are either incurables, or they generally present disease in what may perhaps be called an *unnatural* form, masked by the distress and misery to which they have been previously subjected, and offering very insufficient specimens of ordinary maladies. Their complaints too are by no means sufficiently varied to supply the wants of a Clinical Lecturer, or to offer the students efficient opportunities of studying the different forms of disease, which they will hereafter be called upon to treat. Moreover, the filthy and disgusting habits of the generality of patients who are to be found in its Wards renders this Hospital any thing but desirable as a means of introducing young men to the study of a profession, the details of which are at all times sufficiently revolting to the Tyro, even amidst the most favourable circumstances.

From these considerations we are induced to recommend the formation of a new Hospital, either within the College premises, or in its immediate neighbourhood, wherein the patients shall be made available for Clinical instruction to the students of that Institution, supplying the chief desideratum for completing the College as a School of Medicine. We are aware that the expense of such an Institution would be considerable, but it appears to us, that an opportunity now offers of effecting this desirable object under circumstances peculiarly favourable to its accomplishment, requiring but little additional outlay upon the part of Government. We allude to the contemplated erection of a Fever Hospital in this City, for which a large amount of funds has been already subscribed, and the commencement of which may now be daily expected. It is scarcely necessary to point out how admirably this Hospital would fulfil the objects we contemplate in recommending the formation of such an establishment as part of the Medical College. The advantages of the measure are so apparent, that we can indeed scarcely anticipate a single objection, when we propose that measures be adopted for uniting the Fever Hospital with the Institution under our charge. The situation would be singularly well adapted for its erection as regards the convenience of those who would resort to it for aid, and by the assistance of the College Professors a highly efficient amount of Medical attendance would be insured to the patients, whilst it would afford the best school of instruction for Medical students, which could possibly be devised. At the same time the provision already made for the formation of this Hospital would obviate the necessity of any extra expense in providing the College with a most necessary part of its constitution. Perhaps, too, the very fact of its proposed connection with the latter Institution might be an additional inducement to the Government to support the Hospital, as the objects it would then fulfil would be twofold.

Should our proposition meet with the approval of the Government, we would beg to recommend that some convenient site for the erection of the Hospital be chosen in the neighbourhood of the Medical College, which, perhaps, would be better than placing the establishment within the walls of the latter building. For many reasons it would be more advisable to keep the two Institutions separate, so as to prevent effectually the patients and all strangers from coming within the precincts of the College, a precaution exceedingly necessary. At the same time it would prevent the Native population from confounding the Fever with the Police Hospital, of which the respectable portion entertain a great dread.

1st. In this Hospital separate Wards should be kept for the patients necessary to form the subjects of Clinical Lectures on Medicine.

2d. Besides Medical diseases, a Ward should be formed for patients suffering under such complaints as might be made available for the Lectures of the Professors of Clinical Surgery.

3d. A species of Dispensary should be attached to the Hospital where Out-door patients may be daily attended. This, besides giving the pupils more ample opportunities for observing disease, would materially enlarge the field from whence the selections for Clinical patients might be made—indeed without a Dispensary it would be difficult at all times to find cases of sufficient variety and importance to fill the Clinical Wards. The expense of this Dispensary would scarcely be felt in the general outlay of the institution. It would consist only in some trifling charge for Medicines. The Medical attendance would be afforded by the resident Surgeon of the Fever Hospital and by the pupils, who would perform all the minor operations of bleeding, dressing, bandaging, and making up medicines. The pupils might also be ordered (as in Europe) to attend at the houses of such patients as were unwilling to enter the Hospital, and were too sick to appear at the Dispensary—most of these patients would be found to dwell in the neighbourhood of the student's houses, so that in the mornings and evenings they might be visited without any waste of time.

4th. It will be necessary that an Apothecary reside upon the premises, and that there be a Medical Officer attached to the Hospital for discharging the general duties of the establishment, while some of the pupils may be selected to assist as dressers and to aid in compounding the medicines.

5th. The Clinical Wards should be placed exclusively under the management of the College Professors.

This outline of the scheme will suffice for the present. The consideration of minor details may be deferred until the arrangement we propose be sanctioned; but ere we conclude, we earnestly beg once more to impress upon the Committee the importance of the measure we have laid before them, and at the same time to repeat our conviction of the facility with which the arrangement we contemplate may be carried into effect.

On behalf of the College Council,

(Signed) DAVID HARE,
Secretary.

MEDICAL COLLEGE,
March 9th, 1837.

True Copy,

(Signed) J. C. C. SUTHERLAND,
Secretary, G. C. P. I.

True Copies,
(Signed) H. T. PRINSEP,
Secretary to Government.

No. 11.

TO THE SECRETARY TO THE GENERAL COMMITTEE OF
MUNICIPAL INQUIRY.

SIR,

Judicial Department.

I am directed by the Right Honourable the Governour of Bengal to request that you will lay before the Committee, for such observations as they think proper in their General Report, the accompanying copy of a Letter from the Chief Magistrate of Calcutta, dated the 7th instant, together with its enclosures in Original.

I am, Sir,

Your obedient humble Servant,

(Signed)

R. D. MANGLES,

Secretary to the Government of Bengal.

FORT WILLIAM,
April 18th, 1837.

No. 11. (A)

To R. D. MANGLES, ESQ.,

Secretary to the Government of Bengal.

SIR,

At the urgent request of Lieutenant Abercrombie and of a Mr. Harris, a respectable inhabitant of Colinga, I have the honour to lay before you, for the information of the Governour of Bengal, the accompanying petition by Mr. Harris and report by Lieutenant Abercrombie, on the subject of the frequent fires occurring annually at this season in Calcutta.

2. I add an extract from the Fire Report Book, shewing the number of houses destroyed during the last year and a half.

3. I observe from Mr. Smoult's Volume of Calcutta Bye-Laws, page xxiii. that a law of the nature required by Lieutenant Abercrombie existed in 1780 and was repealed.

4. I remark that in the ordinary course of affairs the presumption is, that the puckha houses pass into the neighbourhood of straw huts—ordinarily, straw huts will not be found to encroach on limits formerly occupied by puckha houses, but the reverse. It is the puckha houses that bring themselves into the neighbourhood of the straw huts. The owners of the houses therefore complain against an evil of their own seeking.

5. In a late fire at Jackson's Ghaut valuable screw houses belonging to Messrs. Watson and Co. were in jeopardy. I was engaged in superintending the extinction of the fire, and told Mr. Gibbon to petition against such inflammable property as that which was burning being allowed to exist close to Godowns well stored with valuable merchandise. I understood that he declined petitioning from discovering the fact that the bulk of the people whom he would ask to petition were themselves holders of similar property. In the event of any such law as Lieutenant Abercrombie desires being passed, it would be necessary to indemnify the owners of straw huts for their property destroyed, or to watch minutely the erection of new ones, allowing a period of so many years for the gradual decay of such huts—either course would be expensive and invidious.

6. There are often straw huts in the plots of ground attached to Calcutta houses: the law I suppose would not touch these; but how are we to draw the line?

7. Upon the whole, I presume Government would not be disposed to sanction a law which would trench so invidiously upon the liberty of the subject to use his property in the manner to him seeming fit.

I have the honour to be, &c.

(Signed)

D. M. FARLANE,

Chief Magistrate.

CALCUTTA POLICE OFFICE,

April 7th, 1837.

P. S. I beg to transmit also Memoranda prepared by the Assessors of the comparative number of houses of all descriptions in the Town.

No. 11. (B)

Number of Straw and Tiled Huts burnt from 20th January, 1836, to 27th March, 1837, inclusive.

1836.	January,.....	63
	February,	49
	March,	894
	April,.....	304
	May,	166
	June,	281
	August,	13
	October,.....	22
	November,.....	106
	December,.....	51

Total,.....1949

1837.	January,.....	65
	February,	21
	March,	420
		506

A true Copy,

(Signed)

R. D. MANGLES,

Secretary to the Government of Bengal.

JUDICIAL DEPARTMENT,

April 18th, 1837.

No. 11. (c)

To D. M' FARLANE, ESQ.,

Chief Magistrate,

&c. &c. &c.

MY DEAR SIR,

Annexed is a list of the Straw and Tiled Huts and Puckha Buildings in the 2d and 4th Divisions for which you wrote for on 29th ultimo.

Mr. Graham is preparing a list of those in his Divisions, and will send it when ready.

I am, My Dear Sir, yours truly,

April 4th, 1837.

(Signed) JOHN CARR.

2d and 4th Divisions.

	Upper Room Houses.	Lower Room Houses.	Brick Shops.	Brick Godowns.	Tiled Huts.	Tiled Shops.	Straw Huts.	Straw Shops.
Second Division.....	1433	1154	1871	640	4543	433	5015	160
Fourth Division.....	623	865	490	0	2042	264	5958	472
Total	2056	2019	2361	640	6585	697	10973	632

Brick Buildings, 7076

Tiled and Straw Huts and Shops, 18887

Total 25963

No. 11. (D)

Memorandum of the various descriptions of Buildings in the 3d and 1st Divisions.

	Upper Room Houses	Lower Room Houses.	Brick Godowns.	Brick Shops.	Tiled Huts.	Tiled Shops	Straw Huts.	Straw Shops.
Upper South or 3d Division.	1299	700	86	540	1325	123	1967	100
Upper North or 1st Division.	3021	2120	713	1885	7132	725	17137	653
Total for both Divisions...	4320	2820	799	2425	8457	848	19104	753

(Signed) R. GRAHAM,

April 6th, 1837.

No. 11. (E)

To D. M. FARLANE, ESQ.,

Chief Magistrate, Conservancy Department.

SIR,

I beg respectfully to bring to your notice a great nuisance, accompanied with serious loss and danger, to the premises No. 14, Lindsey street, for which I am trustee for three orphans. It must be in your recollection the very destructive fire which took place in July last when so much damage was done, and the house mentioned above and the adjoining one had a number of windows burnt and otherwise seriously injured, and it cost upwards of a month's rent to repair the damages done, as well as putting the tenant to the necessity of advertising the house to let, through fear of a similar occurrence. But from that time up to the present, there were no straw huts rebuilt near until the last few days, and after the house undergoing a complete and thorough repair ; and as this is the time for fires, and the huts built of the most inflammable materials straw roofed, endangers the house being exposed to fire, and has prevented our getting a tenant as I had many applications before they were there. And a greater nuisance of which I have to complain is a large hole about six feet diameter and six feet deep, close up to the foundation of the wall, which is a depository for every sort of filth, and in the rains will sap and undermine the wall of the house, as well as create offensive smells, and be the means of keeping the house empty ; and I have been paying at the rate of five rupees eight annas a month house tax for the last three years, beside ground rent. And the people who have put the huts there have no authority for doing so, as the ground is under a dispute to know who the right owner is, nor could they tell me the name of the person who authorised them to put them up, and I expect they have taken possession themselves : all which circumstances I hope you will take into your serious consideration ; as it appears to me the huts have been put there at the time fires are so prevalent, and the value of them nothing, but may be of such serious injury as to ruin the house and every one connected with or near to it, as I have stated. Trusting you will cause an investigation into the grievance complained of, and give me a remedy for the same, I beg leave to remain,

Your obedient Servant,

(Signed) EDWARD HARRIS,

March 21st, 1837.

77, Elliot's Road.

No. 11. (F)

Mr. Harris's second Letter accompanying shews that a fire has taken place among the straw huts complained of. I visited the place this morning, and saw that damage had been done to the North front of his *newly repaired* house, which will not be again repaired under a Hundred Rupees.

Supposing that Mr. Harris can obtain indemnification for this injury to his property in any way, it is nevertheless true that he cannot obtain it from the Police ; nor under the existing laws can he even obtain future probable security for his property from that body.

The case however is a strong one: the property has received considerable damage from the conflagration of grass and mat huts twice in eight months, and it appears to me certainly deserving the notice of Government, to whom it should be represented as an instance of an intolerable nuisance existing in all parts of the Town. No property can be secure while this nuisance, consisting of masses of highly inflammable matter, greatly exposed to fire from all directions and at all times, is allowed in the Town; and while this insecurity leads to the deterioration of the value of property, and is in its consequences highly oppressive to a very respectable class, a remedy exists of the simplest nature, the application of which, with a little firmness and patience, will remove all or almost all danger; and as it injures no one will in the end be received with satisfaction by all parties:—that remedy is, allowing no new huts to be erected of inflammable material, unless that material be so protected as considerably to diminish the probability of its taking fire, and permitting no outer covering to roofs being made with an inflammable material whatever: a hut built of wattle and dab walls, and roofed with kupra tiles, is the simplest and most economical description of hut not essentially liable to take fire.

The proposed remedy would press almost exclusively on the Native inhabitants, and might, in the first instance, give rise to considerable discontent: the laxity of Native custom has, however, been disregarded in other matters in this Town, and I do not see why it should not be in this: the boundaries of all the publick streets are retained secure from encroachment, and a tax is levied for the repair of the roads, &c. These are decided *European innovations*, and on their institution were probably considered great hardships by the Natives, who if left to their own way, would never have introduced either the one or other. In like manner, the landed proprietors will complain bitterly at first of being compelled to double their outlay by building a more expensive description of hut than they at present put up; but when they find that the new huts last treble and four times the time of the old ones, they will submit with satisfaction. They will raise their rent in the first instance certainly, but I believe that a tiled hut does not rent above twenty five per cent in advance of a straw hut at present, and when tiled huts become more general, it is probable that from their greater security their rent will in a short time become equal to that of straw buildings. The poorer classes who inhabit these huts, will complain of the increased rent, and that must be met by an increase of wages: the increased security of property will provide for this increase of wages, and will undoubtedly affect both the proprietors and renters of European houses.

Laying aside all considerations of what the effect of the measure I have proposed will be on the *minds* of the Native population, I maintain, that no one class of the Community is entitled to purchase its convenience at the expense of the security of the property of another; and unless the very difficult proposition can be maintained, that the Europeans should not encroach on the Native "*Quarters*," I know of no argument which can shew their right to place European property in danger when it happens to be in juxtaposition to theirs.

I have argued this matter as between Native and European, because the great majority whose immediate interests would be affected by the proposed measure would be divided into these two classes directly opposed to each other: the Europeans, however, have many straw huts in their compounds, and I am of opinion that they should not be allowed there, although in a less dangerous situation, any more than in Native bazars.

Of Mr. Harris's case I have said little; he is beyond redress for past injury, and his case can only be useful as an instance to be cited for the information of Government, as explanatory of the hardship sustained by himself and others in his situation, under

the existing system. His house is of course very likely to be burnt again immediately the huts formerly facing it are rebuilt.

Regarding the hole, Mr. Harris does not mention by whom it was dug: the owners can be directed to fill it up.

(Signed) W. ABERCROMBIE, *Lieut.*

Supt. Conservancy.

CALCUTTA,
March 27th, 1837.

No. 11. (G)

To D. M ' FARLANE, ESQ.,

Chief Magistrate Conservancy Department.

SIR,

I beg respectfully to bring to your notice a great nuisance, accompanied with serious loss and damage as well as danger, done to the premises, No. 14, Lindsey street, for which I am trustee for three orphans. It must be in your recollection the very destructive fire which took place last July, when so much damage was done in the neighbourhood, and the house mentioned, as well as the one adjoining, had a number of windows burnt and otherwise seriously injured and in great danger. I having a single lady living in the house as tenant at the time, it put her to the necessity of advertising the house to let through fear of a similar occurrence happening again; but from that time up to the present there were no straw huts built near the house till within a few days since, and the house having undergone a thorough repair, cleaned and painted; and as the time of fires was coming on, I did not expect any huts would be put up near the house, when I was surprised to find three huts, one of them on eaves of the wall of the house, built of the most inflammable materials straw roofed and endangering the house; when I addressed a letter to you stating the nuisance I was subjected to, as well by the huts as the great nuisance of a large hole being dug about six feet in diameter and six feet deep close up to the foundation of the wall, which is a depository for every sort of filth and nastiness, and in the rains will sap and undermine the wall of the house, as well as creating such offensive smells, and be the means of keeping the house empty, as the grievances complained of has been the means, having had many applications for it before the huts were near. And after addressing you on the subject on the 21st, I had not been away from the office two hours when a fire broke out in the very place complained of, which had the huts complained of not been there, the house would have been in no danger; but I am sorry to say, the north front of the house is completely disfigured—all the plaster burnt of, and every window burnt, which is a very serious loss after the heavy expense of a thorough repair, and what I shall be obliged to lay out to repair the damage done by the fire of the 21st, beside the loss of rent by the house remaining empty. Being the second time the house has been in danger of being burnt to a shell within eight months, which I hope will meet your serious consideration, and give me some remedy to prevent such occurrences again, as I have been paying 5 rupees 8 annas a month as house tax for the last three years, beside ground rent; and any relief you can give me will be acknowledged with much respect, by

Your obedient Servant,

(Signed) EDWARD HARRIS.

P.S. I would also wish to bring to your notice two cottahs and a half of ground, which I paid at the rate of Five Rupees per month for, for three years and six months, to Sumboo Chunder Sain and Samsunder Bysack up to September, 1830, until the wall fell down ; and I have not been able to find out since who has a right to the ground, as it forms the north front of the house to the northward, and on part of which the huts were erected, and I cannot find out any body who has any authority or right to let out the ground for any purpose, there being no wall on the ground except the one alluded to on the two cottahs and a half, and built by the occupier at that time.

No. 12.

MUNICIPAL INQUIRY COMMITTEE'S REPORT TO GOVERNMENT ON THE LATE FIRES.

The Committee of Municipal Inquiry having been directed by Government to examine into the causes of the late destructive fires, and to inquire into the best means of preventing the recurrence of similar calamities, the Members composing the first Sub-Division of the Committee, under the name of the First Sub-Committee, have examined several witnesses. The evidence taken is appended to this Report. The Committee are of opinion that a sufficient number of such persons as are best able to give them information on the subject, and particularly as to the feelings, prejudices, and habits of the lower classes of the inhabitants of Calcutta, have been examined, to enable them to report on the matters referred to them, which the pressing nature of the case renders them desirous of doing with the least possible delay ; though at the risk of their Report being less complete and particular than it might otherwise be.

They have the honour therefore to report as follows :—

From the evidence it appears, that the fires have almost in every instance originated in straw huts with mat walls, and seldom if ever in tiled huts with mud walls or in brick buildings. The Assessors' Return states the number of straw huts in Calcutta to have been 31,462, and of tiled huts 16,587, total 48,049. Of these, according to Captain Birch's statement, 7174 have been burnt between the 1st January and the 1st May, or about 15 per cent. of the whole ; of which number 5900, or about $\frac{1}{8}$ th of the whole, appear to have been destroyed in the month of April alone.

It appears that property of considerable value, which if otherwise situated would in all probability have been safe from fire, has been partially injured or totally destroyed by fire, owing to its proximity to these straw huts, to the loss in some instances it is stated of from 30,000 to 40,000 rupees ; and that no precautions on the part of the owners of valuable property so situated can secure it from the recurrence of similar danger, so long as the erection of straw roofed or matted huts is permitted in its vicinity.

The Committee have therefore no hesitation in expressing their entire conviction that the enactment of a law prohibiting the erecting of straw roofed or matted huts within the City is necessary to the safety of the lives and property of the inhabitants.

With regard to the effects of such a law in modifying and controlling to a certain extent the rights of individuals in the management of their property, the Committee

think it sufficient to observe, that in all communities it is regarded as a first principle, that the right of private individuals must be exercised with a due regard to the common good, and must give way to the common safety; and that the prevention of so awful a calamity as fire has ever been in all civilised countries considered to impose upon the Government and Legislature, as an indispensable duty, the enacting and enforcing of local regulations of extreme strictness in populous Cities.

That the proposed law will not be difficult to enforce in this City may be inferred from the examples of Madras and Bombay, where the erection of straw roofed huts has long been prohibited. In Bombay, as it appears by the evidence of Rustomjee Cowasjee, Esq., the prohibition took place in 1805 in consequence of a fire which lasted three days, and the good effects of the prohibition have, as he states, been felt ever since in the more rare occurrence of fires, and the ease with which they are extinguished.

But the Committee are of opinion that the effect of the proposed enactment for the future construction of huts will be defeated, unless a provision be made for the demolition of straw huts already built, on compensating the owners. If a few only of these objectionable buildings remain in the Bazars, the danger of their catching fire and communicating it to their neighbours will prevent the erection of a better description of buildings, and may protract to an indefinite period the attainment of that security against the recurrence of these extensive conflagrations which is so desirable.

With regard to the hardships of increasing by law the expenses of the poor in this respect, the Committee have made inquiry of the most respectable Native inhabitants, whose evidence concurs in the fact that an increased expense of 30 to 50 per cent. will be occasioned by the substitution of tiled huts with mud walls in the first instance. But it also agrees in shewing that the expense of repair is so much greater in straw thatched, than in tiled buildings, that in a very short time the expense is equalized, without making any allowance for the increased security of property. That this expense must fall chiefly upon the poorer classes seems inevitable, as it appears that from $\frac{2}{3}$ to $\frac{3}{4}$ of all the huts are the property of the tenant, not of the landlord; and this system of occupation is likely to continue, as the hut is the landlord's only security for the rent of his ground. It is the opinion of most of the Native gentlemen examined by the Committee that this increased expense would not cause much difficulty to the poorer classes, because the landlord, though unwilling to build, will generally have no objection to advance the small sum required to pay the difference between the straw and tiled huts, especially as tiled huts are easier to be let; and his interests are concerned in keeping his tenants together. Those tenants, who could neither procure such assistance nor pay the expense themselves, would be gradually forced into the Suburbs, which would not be a matter of much hardship or inconvenience to them, though it may, and in the opinion of the Committee does, afford a good reason for not extending the proposed law beyond the limits of the Town; it being indispensable that the labouring classes should not be forced to an inconvenient distance from their daily employments.

With regard to the prejudice of the inhabitants, it seems agreed that they consider tiled huts as more respectable abodes than thatched ones—that they do not regard the difference of heat; the greater part of the inhabitants of such buildings being out at their various occupations throughout the day—and that tiles afford as complete protection from the rains as a straw thatch.

The Committee hardly know whether it is necessary for them to notice, as the only remaining objection to the proposed change, an opinion, resting upon high Medical authority, that an increase of unhealthiness would take place without the periodical lustration of fire. The Committee, even were this proved, would find it difficult to admit that the

health of the inhabitants generally ought to be preserved by the general sacrifice of the property, and the partial sacrifice of the lives of the poor. But the Committee is very willing to admit that the facts, upon which that opinion is founded, afford a strong argument in favour of a better system of cleansing the Town, by means the cost of which may fall equally upon all property, and may render unnecessary the aid of such an unmanageable purifier as fire.

But the evidence of those best acquainted with the dwellings of the poor agree in refuting the above mentioned opinion, that the greater durability of the habitations would have the effect ascribed to it, even if the present narrow, tortuous, and irregular alleys in which the Bazars are constructed were continued; and it is unanimous in asserting that if an improved plan shall be adopted, the filthiness of the Town, so far from being increased, will be materially diminished.

From the evidence before them the Committee are of opinion, that until a general plan, approaching to one as complete as the circumstances will admit, shall be laid before the Government, which the Committee hope to do before they separate, and shall be duly considered by the Government, it is necessary, with reference to the immediate re-erection of the dwellings which have been burned down, that the Executive Officers of the Government should be vested with powers to settle and enforce the observance of plans for the erection, arrangement, and distribution of the new huts in the place of those which have been burnt, so as to ensure immediately in those parts of the Town a thorough ventilation, and the means of removing and preventing the accumulation of filth, and of insuring a more watchful superintendence of the Police than can exist at present. In doing this the landlord cannot be injured, but the contrary; as it is evident that more buildings can be constructed on a regular plan than can be put upon the same space of ground in a confused and irregular manner. In the framing any such plan the Committee will be happy to afford any assistance which the Government may consider them capable of contributing.

The Committee are further of opinion, that, even after the proposed alteration in the construction and arrangement of the houses of the labouring classes shall be completed, the safety of the Town from occasional and destructive fires will not be adequately provided for without the construction of Tanks in all the Bazars, sufficiently large and deep to retain the water during the dry season, or the conveying by some other means an ample supply of water to all parts of the Town. The want of water appears to one intelligent Native gentleman, Rustomjee Cowasjee, Esq., who had an ample opportunity of observing the progress of the fire in one large division, to have been one grand cause of the rapid and destructive spread of the late conflagration. The subject of forming Tanks both in case of fire and for domestick purposes, and as material aids in the due ventilation of the City, has occupied much of the attention of the Second Sub-Committee, and will form part of the Committee's General Report.

As the Committee has been informed that a proposal has been made by the Chief Magistrate to assist the poorer classes in rebuilding their huts, and to induce them to build tiled huts by a remission of the assessment for a time, they have thought it their duty to consider this matter; and they would strongly recommend, that, if Government should think fit to give some relief, it should be given in the purchase of ground for the construction of Tanks: First, because they have reason to believe that some benevolent individuals amongst the wealthier classes of the Natives would be willing to pay the expense of constructing the Tanks, if the ground were given by Government, and thus that the publick bounty would go further in this than in any other way: Secondly, because of the extensive

and permanent utility of a good supply of water to the poorer classes, not only as a means of preventing fires but for domestick purposes ; indeed it may be questioned whether this supply in the saving of labour alone in bringing water would not in a great measure compensate for the increased expense of building tiled huts : And, Lastly, because it is in evidence that the assessment is in almost all cases paid by the landlord, and is not considered in the rent The remission therefore would in almost all cases operate as an advantage to him, who has lost nothing but the rent till the houses shall be re-erected ; and would operate no advantage to the tenant, who has lost every thing.

The evidence given to the Committee agrees in attributing the late fires to accident and not to incendiaries ; and the Committee have come to the same opinion. The great number of fires that occurred in the late very hot and dry month of April would of itself lead to this conclusion. Incendiaries might have effected their purpose at an earlier period ; but the extreme heat of the weather and consequent perfect dryness of the buildings and the strength of the wind, in the last month, were quite sufficient to ensure the destruction of every straw roofed hut that might be situated to leeward of any one that happened to catch fire. The extreme carelessness of the lower classes with regard to fire, and their habit of cooking in immediate contact with the inflammable walls of their dwellings, are, in the opinion of the Committee, quite sufficient causes for the great prevalence of fires in a season when every combustible is in the fittest state for ignition, and to warrant them in the firm belief that similar calamities will not cease to recur from time to time, so long as the present dangerous method of building is permitted to exist.

The Committee have appended the Resolutions come to by their First Sub-Committee, in which, as appears by this Report, they have entirely concurred.

CALCUTTA,
18th May, 1837.

First Appendix to the Fire Report.

- 1st Resolution, " That this Committee recommends the enactment of a compulsory law to prohibit the erection of straw roofed or matted huts within the limits of Calcutta."
- 2d Resolution, " That this Committee recommends that Government on compensating owners should have authority to compel the taking down of such huts as are already built, and the substitution of tiled huts."
- 3d Resolution, " That the Executive Officers of Government should be vested with full power to settle plans for the erection, arrangement, and distribution of huts, such as may conduce to the thorough ventilation and facility of cleansing them, and to see the same carried into effect."
- 4th Resolution, " That it be suggested to Government, that it is highly desirable to construct more Tanks in various parts of the Town, and that a law should be enacted to enable Government to purchase ground for the purpose."

Facts of which the First Sub-Committee is satisfied.

- 1st. That private property has been injured to a considerable extent, in some cases thirty or forty thousand Rupees, by the proximity of straw huts in the late fires.
- 2d. That the difference of expense between straw and tiled huts does not exceed fifty per cent.

3d. That the Natives have no prejudice against tiled huts, but rather prefer them, as more respectable.

4th. That the huts are chiefly erected by the tenants, not by the land owners, and therefore the immediate expense will fall chiefly on the tenant.

5th. That if tiled huts are erected on a regular plan, it will not increase the filthiness or unhealthiness of the Town, but, on the contrary, will diminish them.

6th. That the whole number of straw huts, by the Assessors' Return, is 31,462, and tiled 16,587—total, 48,049.

Houses burnt according to Captain F. Birch's statement from 1st January to May, 7174; which is about fifteen per cent., of which, in April 5900, about one-eighth of the whole.

7th. That the fires have this year been chiefly owing to the prevalence of dry weather, and not to incendiaries.

8th. That the present is a good opportunity for the passing of such a law as above suggested, partly on account of the exertions of a Committee now sitting, and partly from the great number of buildings which must be reconstructed.

9th. That a suggestion has been made by the Chief Magistrate that it would be desirable to remit the assessment for one or two years, as an inducement to erect tiled houses, but that it appears from the proportion of huts erected on land not belonging to the occupier of the house, being about $\frac{3}{4}$ ths of the whole, that this bonus could not benefit the tenant generally, the assessment being levied upon the land owner, who will not be induced to build—the house being his only security for the rent.

10th. That the Town is at present divided into five districts by the District Charitable Society, for the purpose of affording relief to the sufferers in the late fires, and that a Committee of two Europeans and four Natives has been formed for each Division, who will report to the General Committee of that Society, which will meet daily from to-morrow, till the arrangements are completed.

No. 12. (A)

PAPERS RECEIVED FROM THE DISTRICT CHARITABLE SOCIETY.

FIRST DIVISION.—*Shaum Bazar and Baug Bazar.*

May 11th, 1837.

SUB-COMMITTEE FOR THE RELIEF OF FIRE SUFFERERS.

Present,—At a Meeting held at the Baug Bazar,

D. M'Farlane, Esq.,	Radhanauth Mitter,
Captain F. W. Birch,	Sreenauth Mookerjee,
Dr. Jackson,	Kalachand Ghose.
Kaseepersaud Ghose,	

The gentlemen present mention that no case of distress from fire is known to them—Mr. M'Farlane intimates that he went over the sites of burned houses in the Thannahs of Baug Bazar, and Shaum Bazar, and Shyam Pookur, and that he found no prima facie case of distress except one, that of _____, who is not present.

Kaseepersaud Ghose and Kalachand Ghose propose that they put themselves in communication with the Thannadars, and report by Circular to the Members of the Sub-Committee any case that may appear deserving of further inquiry.

Resolved nem. con.

CALCUTTA, *May 12th, 1837.*

(*Signed*) D. M'FARLANE.

No. 12. (B)

SECOND DIVISION.—*Simlah, Joroosauko, and Durmahattah.*

TO CAPTAIN R. J. H. BIRCH,

Secretary, District Charitable Society.

SIR,

We have visited the places burnt by the late fires in Durmahattah, Baniatollah, Rambaggan, and Nimtollah Street, but have not discovered any case which we can recommend for relief. The reconstructions are going on rapidly, and in most cases the new habitations are built or building tile roofed. In Baniatollah Street two milkmen are building straw houses upon their own ground, but the neighbours are much dissatisfied with them and may induce them to alter their intention. They asked loans of 50 or 32 Rupees to build tiled huts, but the ground is their own, which with their other circumstances do not appear to us to need the assistance. In Durmahattah the reconstruction is only commenced, and our inquiry may lead to retard progress for a day or two.

We are, Sir, yours most obediently,

(Signed)

{ PROSSONNOCOMAR TAGORE,
RUSSOMOY DUTT,
C. KERR,
DWARKANAUTH TAGORE.

No. 12. (C)

FOURTH DIVISION.—*Pudopooker, Gooreahma, Taultollah, and Jaun Bazar.*

TO CAPTAIN R. J. H. BIRCH,

Secretary to the Central Committee of the District Charitable Society.

SIR,

We herewith submit for the consideration of the Committee, the result of our investigations, in the prescribed form as near as practicable, as far as we have yet proceeded, of the cases of the poorest of the sufferers by the late fires in the Fourth Division of the City.

It will be observed, that, with very few exceptions, the whole of the cases are those of destitute widows, who we deemed most urgently requiring immediate relief.

We beg to offer it as our decided opinion, that even if sufficient means were available, it would not be likely to effect generally scarcely any permanent good to assist these poor people in rebuilding their habitations with the like combustible materials as they were wont to employ; as they would be liable to be again burnt out by the first fire happening contiguous to them; and even the erection of a few huts of wattle and dab walls with tiled roofs amidst a number of huts of straw or leaf roofs would not be safe from fire, nor indeed unless the whole of the huts on one site be constructed with tiled roofs; as we have observed on the localities we have examined that several very good habitations of wattle and dab, and some with solid mud walls and tiled roofs, have been destroyed by having been erected amidst clusters of huts with straw or leaf roofs, which combustible materials it must be evident is the chief cause of flames spreading so rapidly from roof to roof, and which is not the case with tiles.

We cannot but avail ourselves of the opportunity to state that in several of the localities we found great nuisances of filth with scarcely any pathways, the huts having been crowded together in large irregular masses, which must render such localities very unhealthy from the want of drains, cleanliness, and ventilation, and where the scavenger's carts cannot, and we believe they never do, approach.

We strongly recommend to the Committee to urge the foregoing facts upon the attention of the proper authorities, in the hope that the needful may be effected to guard the population as far as practicable from the miseries of frequent fires, and to keep clean those parts of the Town hitherto almost altogether neglected.

We are, Sir,
Your most obedient Servants,

CALCUTTA,
May 12th, 1837.

(Signed) { G. VINT,
J. PHIPPS,
C. W. LINDSTEDT.

No. 12. (D)

May 29th, 1837.

Circular addressed to the Landlords by the Sub-Committee of the 4th Division.

WE request you will have the goodness to state to us how far you may be disposed to aid your poor tenants, whose huts have been destroyed by the late fires, in rebuilding their dwellings with mud plaster walls and tiled roofs, the Committee for relieving the sufferers making such advances of money through you, for that purpose, as you may be willing to guarantee the due appropriation of.

We trust this proposition will meet with your favourable consideration, as the substitution of mud and tiled huts for those of mats, straw, and leaves, offers the only feasible means of guarding against frequent fires, and their rapid and wide spreading consequences, and would doubtless be the means of improving the value of your estate.

We are,
Your most obedient Servants,

CALCUTTA,
May 19th, 1837.

P. S. Be pleased to send your answer as soon as convenient to Mr. John Phipps, No. 5, Jaun Bazar Street.

No. 12. (E)

Landlords addressed individually.

RAJAH DHEE RAUJ MOHARAJAH COLLEKESSEN BAHADOOR. Estate at Dhurumtollah, Sukaureetollah.

BABOO DEBNARAIN DAY. Estate at Puddopookur, &c.

DOORGACHURN PAUL. Estate at Nafriet's Garden, Taltollah.

RAMDHONE GHOSE. Estate at Taltollah.

BISSONAUTH MUTTYLOLI. Estate at Russahtollah, Bow Bazar.

BANCHARAM DUTT and BUDDEENAUTH DUTT. Estate at Gurrywantollah, Jaun Bazar.

MUKHTAR of MOONSHEE JANABALLY. Estate at Moocheeparah, Taltollah.

MANAGERS of the Estate of the late BABOO RAJCHUNDER DOSS. Estate at Jaun Bazar Street.

MANAGER of the Estate called the Nyab's Garden, Taltollah.

BABOO OBHOYCHURN BONERJEE. Estate at Bow Bazar.

SYED FAUZALARABBY. Estate at Harrytollah.

. No. 12. (F)

To the Sub-Committee of the 4th Division.

GENTLEMEN,

In answer to your Circular Letter of the 19th instant, I beg to express my perfect willingness and anxiety to render all the aid in my power to my poor tenants who have suffered from the late fires, in rebuilding their habitations in a more substantial and secure manner than hitherto generally adopted by the poorer classes of the Native population, provided it be understood distinctly as the radius of a new system under an enactment, and that no building be hereafter allowed to be erected with straw or leaf roofs contiguous thereto. Because if the latter be permitted, any assistance that might be afforded to my tenants, or to any others in similar unfortunate circumstances, would not be at all permanently beneficial to them, as their tiled huts would eventually be liable to be destroyed by the first fire happening near them; indeed, unless the erection of mat huts with straw or leaf roofs be totally prohibited, I do not see that any public benefit can result from any partial assistance that might be afforded in rebuilding huts, as seems to be contemplated by the General Committee.

CALCUTTA,
May 22d, 1837.

I am, Gentlemen,
Your most obedient Servant,
(Signed) RAMDHONE GHOSE.

No 12. (G)

TO MESSRS. PHIPPS, MADGE, AND LINDSTEDT.

SIRS,

In answer to your Letter of the 19th instant, I beg to express my perfect willingness to contribute all possible aid to my poor tenants who have suffered from the late fires, to rebuild their habitations in a more substantial and secure manner; but at the same time I cannot refrain from observing, that unless measures be adopted to prevent any future erection of straw or leafed huts contiguous to my tenantry, it would be of no avail to the tenants, as the first fire that might happen to break out at the neighbourhood would eventually burn their huts down. I do not see any lasting advantage that might be accrued to the publick, unless all the huts throughout the City be made of tiled roofs.

BOW BAZAR,
May 25th, 1837.

I am, &c.
(Signed) OBHOYCHURN BONERJEE.

No. 12. (H)

TO CAPTAIN R. J. W. BIRCH,

Secretary to the Central Committee of the District Charitable Society.

SIR,

Although not distinctly within our province as members of the Fire Committee, in our perambulations over the different localities of the recent fires in our Sub-Division, (the 4th) we have observed several very great nuisances, alluded to in our Report of the 12th

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instant, which we deem it necessary to bring to the notice of your Committee, with an earnest request that the same may be laid before the Government, and which we trust will meet with the redress necessary for the safety of the publick health.

This representation has reference principally to Fenwick's Bazar, belonging to the estate of the late Nemychurn Mullick, situated contiguous to the rear (eastward) of some of the houses near the northern extremity of the Chowringhee Road. One spot exhibits a most intolerable nuisance in a cluster of Mehtur's tatties, one of them, belonging to Shibboo Mehtur, including a large open cesspool, containing a vast accumulation of stagnant putrid water dammed up, and which it appears has for a long time remained *in statu quo* to the great annoyance of the inhabitants of the contiguous dwellings. We are confident that the inhabitants of the houses indicated above on the Chowringhee Road, cannot but be ignorant of the existence of such a dreadfully filthy locality so contiguous to them, to the imminent danger of their health.

We have been informed by one of the parties to the representation, that a Petition from several individuals was presented to the Chief Magistrate in the cold season of 1835-36, relative to the foregoing nuisance; and that in August last, a Letter was addressed to the Secretary to the Fever Hospital Committee on the same subject; and Mr. Phipps has shewn us copy of an address he sent to the said Committee in July, 1836, respecting a nuisance near the western end of Jaun Bazar Street, but we regret having to observe, that none of the nuisances we have herein alluded to have been as yet at all remedied; and we beg to urge that unless those grievances be removed it would not be practicable for us to carry into effect the arrangements prescribed by the General Committee as to building huts in uniform order, so as to ensure cleanliness and ventilation on this site of dense Native population upon one of the most improveable parts of the City. We have been given to understand that the long pending litigation in which the ground in question was involved, has terminated; we hope, therefore, that the present proprietor of the estate will not suffer it to be any longer in the sad condition we have depicted.

We are, Sir,

Your most obedient Servants,

(Signed) { GEORGE VINT,
J. PHIPPS,
RAMDHONE GHOSE.

CALCUTTA,
May 29th, 1837.

No. 12. (1)

To W. C. HURRY, ESQ.,

Secretary to the Municipal Committee, Calcutta.

SIR,

Understanding that the question of regulating the mode in which persons may build huts is referred to your Committee by Government, I do myself the pleasure of forwarding four petitions recently received by me on the subject.

I am, Sir, your obedient Servant,
D. M' FARLANE.

May 6th, 1837.

No. 12. (J)

To DAVID M' FARLANE, ESQ.,

Chief Magistrate, &c. &c.

SIR,

The fires breaking out constantly in the Town of Calcutta, destructive to animals and property, appear to me have proceeded from no other cause than the tricks playing by dealers in chopper building materials, and the work people called Gramies. If my memory does not fail me, within some year of the establishment of the Calcutta Police it was found out; and the then Commissioner thought it advisable to pass an order restricting the erection of straw huts, and recommended tiled ones in their stead, and to fine in a moderate sum persons in whose house the fire broke out first.

To this the owners of lands got Dr. Fleming and Mr. Killican, then Commissioners, to object that the tiled houses would be mortal to the inhabitants by their getting sick; they thus got the point settled partially for the benefit of the owner of lands, without seeing the impropriety in such orders.

By increase of population numerous huts are augmented, and the fires break out every morning and evening. I beg leave to suggest the propriety of making an invariable rule to do away the straw huts within the boundary of the City of Calcutta, and order tiled ones to be substituted. Should you, Sir, not feel warranted to take such measures, be pleased to send it up to Government, with such remarks as appear to you requisite for the security of the City.

I have the honour to be,

Sir,

Your most obedient humble Servant,

CALCUTTA,
May 1st, 1837.

(Signed) NILMONEY DAY.

No. 12. (K)

To D. M' FARLANE, ESQ.,

Chief Magistrate.

SIR,

In consequence of the dreadful fires daily occurring, I have to beg the favour of your kindly ordering the Thanadar of Sootanooty to induce the owners of the few straw huts standing on the west side of my house in Simla, Manictullah street, take down their choppers, or to have tiles put on them instead until the heat of the weather is subsided, as I am in danger of life and property should a fire take place in any of them. I am the more alarmed, as one of them actually had taken fire a few days ago, but with great exertions on our part it was put out.

I am, Sir,

Your most obedient Servant,

CALCUTTA,
May 1st, 1837.

(Signed) BUNGSEEDHUR MITTER.

No. 12. (L)

To His Majesty's Justices of the Peace for the Town of Calcutta.

The humble Petition of PRANKESSEN SEAT,

Most humbly Sheweth,

That your Petitioner has a family dwelling house situated at Nimtollah Street, No. 142, on the east side of which is placed a large heap of straw, belonging to one Juggut Sen, which is higher than an upper roomed house. That, in consequence of the most destructive fires to which Calcutta is now subject, your Petitioner fears that, if the said straw heap take fire by chance, your Petitioner most probably shall lose his family dwelling house and with all the property in it, and his family shall be endangered by it.

Therefore your Petitioner humbly prays your Worship will be pleased to issue an order to the owner of the straw to remove the same to some other place out of the Town, with liberty to keep a small quantity for sale daily.

CALCUTTA,
May 1st, 1837,

And your Petitioner, as in duty bound,
Shall ever pray.

No. 12. (M)

To D. M' FARLANE, ESQ.,

Chief Magistrate of the Town of Calcutta.

THE MEMORIAL OF THE UNDERMENTIONED INHABITANTS OF BYTUCKANNAH,

Respectfully Sheweth,

That, in consequence of there having been huts around our pukka buildings and premises in Bytuckannah Street, we have severely suffered from the fire which broke out on the 27th ultimo, a circumstance which, we trust, will not only be corroborated by the notice in the enclosed "Englishman" of the 29th idem, to which we beg leave to refer you, but will also appear from the statement of an Officer, if one be deputed from the Police Office to inspect and report upon the losses which we have respectively suffered, and which as we are again likely to meet with. We have therefore to solicit that the Native inhabitants residing around our premises, (some of which have been completely burnt and are falling down) may be prohibited from building any straw huts, and ordered to build houses with mud walls and tiled roofs, as has been done in St. James's Street, where, the huts having been burnt in several successive years, no fire has occurred for the last three years, and the inhabitants thereof are safe from all danger.

We further pray, that, should it be out of your power to enforce of your own authority the erection of a safer constructed dwelling by the Natives in the neighbourhood, that you will be pleased to forward our unfortunate case to Government, that a due consideration may be given to the subject, as one of publick interest, and so materially affecting the welfare and safety of the inhabitants of Calcutta generally.

And your Memorialists, as in duty bound, will ever pray.

CALCUTTA, May 4th, 1837.

(Signed)

J. G. HALEBERTON, suffered to the extent of 250 Rupees.
WIDOW MARIA PORT, Ditto ditto 500 Rupees.
J. AUGESTINE, Ditto ditto 400 Rupees.
D. GOMES, Ditto ditto 50 Rupees.
M. DIXON, Ditto ditto 350 Rupees.
SAM. AUGUSTINE, Ditto ditto 50 Rupees.
E. D. FABIAN, Ditto ditto 150 Rupees.
F. REBEIRO, Ditto ditto 170 Rupees.
N. BOTELLHO, Ditto ditto 1000 Rupees.
E. BOTELLHO, Ditto ditto 200 Rupees.

A P P E N D I X C.

E V I D E N C E

TAKEN BY THE

F I R S T S U B - C O M M I T T

U P O N

T H E F E V E R H O S P I T A L

A N D

M U N I C I P A L I M P R O V E M E N T S.

C A L C U T T A :

G. H. HUTTMANN, BENGAL MILITARY ORPHAN PRESS.

1838.

APPENDIX C.

ERRATA.

- Page.
- i. Line 1st and 3rd from bottom, *for* 'Quarter' *read* 'Month.'
 - x. Line 7 and last, insert within brackets the words "Corroborates Street as to remuneration."
 - xi. Line 11 from bottom, *for* 'cents' *read* 'cent.'
 - xiii. Line 2nd from bottom, *for* 'petitions' *read* 'petitioners.'
 - cxxxii. Line 8. *for* 'unable' *read* 'enabled'; and line 2 from bottom, *for* 'even' *read* 'Even.'
 - cxxxiii. Line 3 and 8 from bottom, *for* 'having' *read* 'Having.'
 - cxxxviii. Line 7 dele 'That,' and *for* 'in' *read* 'In.'
 - cxxxix. Line 2. *for* 'come' *read* 'came.'
 - cxliii. Line 21. *for* 'scite' *read* 'site.'
 - cxlviii. Line 8 from bottom, *for* 'shall' *read* 'should.'
 - cli. Line 10. *for* 'connection,' *read* 'conviction.'
 - clxxxviii. Line 5 from bottom, *for* 'diseases' *read* 'disease.'
 - clxxxi. Line 4 dele 'semicolon' after 'them' and insert a full stop, after 'otherwise', and at the 5th line *for* 'it' *read* 'It.'

APPENDIX TO APPENDIX C.

- 11 Line 2nd from bottom *for* '1,39,967-2-0' *read* '90,351-13-2'
- 35 " 14th *for* 27,37,642-5-8 *read* 27,37,742-5-8
- " " 15th *for* 1,218-12-7 *read* 1,118-12-7
- " " 16th *for* 1,879-14-6 *read* 1,779-14-6

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MUNICIPAL ENQUIRY.

First Sub-Committee.

EVIDENCE.

No. 1.

27th July, 1836.

Mr. John Carr, examined.

No. 1.

Mr. John Carr,
27th July, 1836.

Q. 1. How long have you held the situation of an Assessor of the House Tax?
—A. Since 1831.

Q. 2. How long has Mr. Graham held his situation?—A. I think he was appointed in the beginning of 1832, but I do not recollect the exact date.

Q. 3. By whom are the Assessors of the House Tax appointed?—A. By the Magistrates in Sessions.

Q. 4. How are the Assessors remunerated?—A. By fixed salaries. I receive 400 Rupees a month, and 30 more for Sircars, and Mr. Graham receives 300 a month, and 30 Rupees for Sircars.

Q. 5. What portion of your time is occupied in discharging your duties as an Assessor?—A. I conduct my business as an Assessor in the mornings and evenings, and a good deal of time is occupied. I do not go about examining premises in the day time, for, independent of the heat rendering it impossible to do so, it would be entirely useless, as I should not be able to obtain any information, for at that time every one has some business to attend to, and the occupiers of houses would not be in the way to answer questions.

Q. 6. Do you go about the Town yourself?—A. Yes, and the Sircars above alluded to, assist me.

Q. 7. Are petitions presented by the Householders against your valuation?—A. Yes, both by Europeans and Natives, but the appeals are generally against the old valuation.

Q. 8. What part of the Town is assessed by you?—A. The 2d and 4th Divisions, the former including all houses from Loll Bazar to Cotton Street, and valued at about Sicca Rupees 1,20,000 per ~~Quarter~~, and yielding a Quarterly Tax ~~month~~ of about Sicca Rupees 18,000—and the latter including all houses in Chowringhee, south of Durrumtollah Street, valued at about Sicca Rupees 1,00,000 per

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Mr. John Carr,
27th July, 1836.

and yields a Quarterly Tax of about Sicca Rupees 15,000. I am speaking in round numbers, and without reference to my books, the valuations and Tax, may probably be a trifle less than the above.

Q. 9. It would appear by your statement that the Division occupied by the Natives, pays more Tax than that occupied by Europeans?—A. Yes, because the Natives' houses are built much nearer to each other, than the Europeans.

Q. 10. What part of the Town is assessed by Mr. Graham?—A. He has charge of the 1st and 3d Divisions.

Q. 11. Do you keep an Office?—A. I have no allowance for an Office, and I therefore appropriate a room in my own house to that purpose. I have not had any Office furniture allowed me, such as desks, tables, almirahs, &c. &c. I have provided these at my own expense.

Q. 12. Have you any Assistants?—A. No, only the Sircars already alluded to.

Q. 13. When Householders consider your Assessment objectionable, what mode is adopted, and where do they apply for redress?—A. When I increase the existing rate of valuation I serve the Proprietor with a printed notice, informing him what Tax he will have to pay Quarterly, upon the proposed valuation. The printed notice directs him to appeal to the Magistrates, through the Clerk of the Peace, within a given number of days, should he have any objection to the new valuation. If he appeals, he is told that his case will be laid before the Magistrates on a certain day, and he is requested to attend personally at the Police, when he is at liberty to urge any objections, and to bring forward any proof he may be able to produce, to shew that his objections are well founded.

Q. 14. What is done in small cases?—A. All cases are decided in the same manner.

Q. 15. Do the Magistrates practically enquire and reject your Assessment?—A. They decide with reference to our reports, and to the objections urged by the Petitioners; when premises are let, it is easy to fix the proper valuation.

Q. 16. How do you ascertain the value of houses?—A. In the European part of the Town, where the houses are generally let, it is not difficult to value them, as we derive our information from the Tenants, and if the information we obtain from them, agrees with the Landlords' statement, we feel satisfied that we have arrived at the actual rent, at which the premises are let. In the Native part of the Town, it is very difficult to ascertain the value of property, as the houses are not generally rented.

Q. 17. What proportion of Assessment do the Natives bear to the European or Christian population?—A. I cannot answer this question off hand—and it would take a long time to prepare a statement.

Q. 18. What do you suppose is the proportion of the sums collected from each Division, from the lowest to the largest, upon an average?—A. There are valuations from 4 annas on, say, a single hut, up to about 7,000 Rupees a month, which is about the rate, the Government House is assessed at. There are hundreds of numbers assessed at, from 4 annas to 600 Rupees a month, and it would take a long time to prepare a statement.

Q. 19. Is not the present Assessment founded from a book of Mr. Laprimaudaye's?—A. I believe the Books prepared by Mr. Laprimaudaye may be said to be the foundation of the present Assessment. I believe the Town was newly Assessed in 1821. Mr. Laprimaudaye's Books no doubt assisted much, and may therefore probably be considered as the foundation of the present Assessment. There have, however been so many appeals, and new Assessments, that I think but few numbers remain at the old valuation; where alterations have not been made, of course the premises stand at the old valuation.

Q. 20. Have you any thing to do with the Collection of House Tax?—A. No.

Q. 21. Is there any body else to value the houses, besides yourself and the Sircars?—A. No one; my Sircars do not assist me in forming my valuations; they are not persons I could place any dependence on.

Q. 22. What is the difference between the present rate of valuation of property for Assessment, and that of 5 years back?—A. It is from 30 to 33 per cent. or about $\frac{1}{3}$ d lower. Property fell much in value after the failure of the Agency Houses. After Alexander and Co. and Mackintosh and Co.'s failure, about 2500 Petitions were sent in, mostly for reduction.

Q. 23. Do you think the Assessment at the present rate of 5 per cent. is as high as property could bear?—A. I think it might be increased to the full rate of $7\frac{1}{2}$ per cent. as allowed by Act of Parliament on all houses valued at, or above, say 100 Rupees, or 150 Rupees a month, and I do not think this would be oppressive,—on the other hand, I consider 5 per cent. too high a rate on huts.

Q. 24. Do you think all premises are valued as high as the property could bear?—A. Yes.

Q. 25. Have you Assessed all the property in the Divisions under your charge, which is liable to Assessment?—A. Yes.

Q. 26. Have you any suggestions to offer for the improvement of the Assessment?—A. No. The value of property in the European part of the Town, is, I think, ascertained with sufficient accuracy. There is great difficulty in valuing the Native part of the Town, because no respectable native ever rents a house, unless he gets it much below its value, or unless he is only a temporary resident. Almost all Natives live in their own houses; even those who live in huts, the huts are their own, and there are consequently but few houses actually let, except in the immediate

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neighbourhood of the large Bazars. I must allow that I do not feel the same confidence in my valuation of houses occupied by Natives, as in those occupied by Europeans. We often do not see the whole of the premises, as Natives will not allow us to see the parts occupied by their females. I do not however see how the present plan is to be improved, there must be some impartial person, to go between the Tax-payer and the Collector. The Natives have no proof of the value of their houses, that is, what they could let them for, and even if they did let them, they must allow that, under the prejudices they have against living in a house, which they hire, the rent they could obtain, would be much under what the houses are really worth.

No. 2.

Mr. Rowland Graham,
27th July, 1836.

No. 2.

27th July, 1836.

Mr. Rowland Graham, examined.

Q. 1. How long have you been an Assessor, of House Tax?—*A.* I have held the situation of Second Assessor, since December, 1831.

Q. 2. What Divisions are under your charge?—*A.* The first and third Divisions.

Q. 3. How many houses, &c. are there in the first and third Divisions, and what is the quarterly amount of Tax in each?—*A.* I do not know the number of houses, huts, &c. it would take some time to count them. The first Division comprises all houses and huts from Mutchua Bazar to the end of Baug Bazar, which are taxed at the quarterly sum of Sa. Rs. 15,106-4—and the third Division, those from Durruntollah Street to Bow Bazar Street, which are taxed at the quarterly sum of Sa. Rs. 17,920-5-3. The first Division is inhabited by the Native population, and the third by Europeans and Natives.

Q. 4. Do you find any difficulty in forming a correct valuation of the houses and other description of premises under assessment?—*A.* No. In the Native part of the Town, I generally experience delay, in prevailing upon the Natives to allow me to look at that part of the premises occupied by the females, from the entrance door of the inner, or zennanah, square—Native houses generally consist of two squares, viz. the outer, or public square, the inner, the zennanah.

Q. 5. When your valuation of premises is objected to, by Agents, or Landlords, upon what grounds do you form your valuation?—*A.* By comparing them with similar premises, in similar situations, and value in the Division.

Q. 6. What is the average value of Native houses?—*A.* I cannot say, nor do I think it can be ascertained with any degree of correctness, without classing the houses, which would be attended with some expense.

Q. 7. What is the cause of the decrease of Tax in the Native part of the Town?—A. The general decrease in value of property which commenced about the time of the failure of the Agency houses.

No. 2.

Mr. Rowland Graham,
27th July, 1836.

Q. 8. What remuneration do you receive?—A. A salary of Sa. Rs. 300 per month, and 30 more for my Division Sircars. I have no allowance for office rent, nor for the purchase of desks.

Q. 9. What portion of your time is occupied in discharging the duties of Assessor?—A. The mornings and evenings, that is to say, in examining houses from day light to nine, half-past nine or ten o'clock in the morning, and from half-past three or four o'clock to dusk in the evening. Mornings and evenings being the only time the inhabitants are to be met with at home. On Saturdays, in Sessions I attend the Police with my Reports on premises, for which applications have been made, to lay before the Chief Magistrate for confirmation, when the inhabitants are requested to attend to hear the same, and if objected to, to produce evidence in confirmation of their respective applications. After Sessions is closed, I am engaged in the middle of the day, preparing a Report of all that has been done in Sessions, for the confirmation of the Magistrates, a day or two previous to opening the ensuing Sessions, and in making a Memorandum and valuation on all new premises, or alterations in premises, for the purpose of giving notice to the respective owners at the opening of the ensuing Sessions of the Tax intended to be levied on each. And I am at all times, from ten o'clock till half-past three or four, ready to give the inhabitants information respecting their houses, &c. and at the Magistrates' command when required.

Q. 10. Do you derive information from your Sircars?—A. Yes; when they meet with any alteration in premises in their respective Divisions, that may have escaped my notice, and assistance in explaining to the Natives the necessity of their allowing me to see the zennanah part of the premises, from the entrance door, to form a correct idea of the value. And if I am not satisfied with the view I have from the door, I am frequently allowed to advance a few steps into the square.

Q. 11. Have you Assessed all the property in the Divisions under your charge, which are liable to Assessment?—A. I have.

Q. 12. Can you suggest any improvement in the mode of Assessment?—A. None, except that the Tax on houses of small value, not exceeding from 60 Rupees to 80 Rupees rent per month, should remain at the present rate, and all above that rent be taxed at 6 per cent.

Q. 13. Do you think the Tax in the Native part of the Town could be increased?—A. No; I consider the Tax is levied on the Native part of the Town at its present full valuation, and liable to decrease.

No. 3.

Rajkissore Set,
30th July, 1836.

No. 3. •

30th July, 1836.

Rajkissore Set, examined.

Q. 1. What are you?—*A.* I am head writer in Collector of Assessment Captain Birch's Office.

Q. 2. How long have you been employed in the Collector of Assessment's Office?—*A.* For fifteen or sixteen years. I have served under Mr. Macleod, Mr. Money, Captain Steel and Captain Birch.

Q. 3. Who collects the House Tax?—*A.* It is collected by the Collecting Sirkars of the different Divisions.

Q. 4. How many Divisions are there?—*A.* Four.

Q. 5. Can you state the number of Sirkars employed for collecting in each Division, and their names?—*A.* Yes, Ramsabuck Mookerjee, Essurchunder Chowdery, and Purmaud Sirkar, are Collecting Sirkars, of the First Division; Ramhurry Roy, and Ramessur Roy, of the Second, Nimchund Bonerjee of the Third, and Coylas Chunder Chowdery, of the Fourth Division, in all Seven Sirkars, who have the collection of all the Assessment Bills.

Q. 6. What is your duty?—*A.* I make up Quarterly Statements, attend the Police to obtain Summons, and Distrain Warrants against the defaulters, and attend the Magistrates, to give requisite information, when the causes are heard and decided.

Q. 7. Who makes out the Assessment Bills?—*A.* The Bills are made out by Writers under me from the copy of the Assessors' Division Books, and being signed by the Collector of Assessment are delivered to the Bill-keeper, who distributes them amongst the Collecting Sirkars for collection.

Q. 8. How, and by whom, are the Bills collected and brought to account?—*A.* The Collecting Sirkars, collect the Bills, and the sums collected during the quarter, are remitted from time to time, to the Collector's Office, with a Report, and brought to account, and entered in the Bengallee Books, by the Bill-keeper and his Mohurer. I make up my Quarterly Statements from those Books and Reports.

Q. 9. How do you get a copy of the Assessors' Division Books?—*A.* The Assessors deliver the Division Books to the Magistrates and we get a copy thereof from the Clerk of the Peace, and two Writers under me, make out the Quarterly Bills from that copy.

Q. 10. In what language and character are the Quarterly Assessment Bills made out?—*A.* In the English language and character. In Mr. Money's time, there

used to be some Bengallee writing on the Bills, which is omitted since Captain Steel succeeded him in the Office of the Collector of Assessment.

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Rajkumore Set,
30th July, 1836.

Q. 11. When the Bills are made out by the two Writers under you, what then takes place in regard to putting them in circulation for collection?—*A.* As soon as the Bills are made out, they are handed to the Collector of Assessment for signature, when signed, they are sent to the Bill-keeper by the Collector, and the Bill-keeper delivers them to the Collecting Sirkars of the Division, as I have stated before.

Q. 12. Do the Collecting Sirkars you have named, collect the Assessment both from Europeans and Natives?—*A.* Yes.

Q. 13. What check is there upon the Collecting Sirkars in respect to the amounts collected, and remitted to the Collector's Office?—*A.* At the end of every quarter, a balance is struck between the amount of the Bills delivered to the respective Collecting Sirkars of the Divisions, and the amount remitted by them respectively, and they are obliged either to pay the money, or produce uncollected Bills, to the Bill-keeper for the amount of balance appearing against them respectively

Q. 14. Does Captain Birch see the unrealized Bills, when the adjustment you have mentioned, takes place?—*A.* No; he merely sees the accounts kept in the names of the different Collecting Sirkars.

Q. 15. Then the examination of the accuracy, and non-accuracy of the Collecting Sirkars accounts, remains with the Bill-keeper?—*A.* Yes.

Q. 16. Is there not always, a large outstanding balance of unrealised Bills, from year to year, and if so, who examines the accuracy of that account, with the Bills on hand of the Collecting Sirkars?—*A.* The examination of it also rests with the Bill-keeper.

Q. 17. Is the Bill-keeper under you?—*A.* No; he is under the Serishtadar Parbuttychurn Mookerjee, who is security for the Bill-keeper.

Q. 18. Do you know what security the Bill-keeper gives to the Serishtadar?—*A.* I do not know.

Q. 19. What is the duty of the Serishtadar?—*A.* All money transactions pass through him—he does not check the Bills.

Q. 20. How many Writers are there in Collector of Assessment's Office?—*A.* Eight, including myself.

Q. 21. What is the salary of the Serishtadar?—*A.* Seventy Rupees per month.

Q. 22. What is the salary of the Bill-keeper?—*A.* Twelve Rupees per month.

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Q. 23. Do you ever compare the balance with the outstanding Bills?—*A.* I do not. It is the business of the Bill-keeper.

Q. 24. Under what circumstances do you apply to the Police, for the process of Summons against defaulters?—*A.* When four or five Bills are in arrear, we serve the parties with a notice from the Collector's Office, to pay the amount by a certain day, and if the amount remains unpaid by that day, we apply to the Magistrates for Summons.

No. 4.

Mr. John Street,
30th July, 1836.

No. 4.

30th July, 1836.

John Street, examined.

Q. 1. What are you?—*A.* I am a Constable attached to the Assessment Department, since September 1835. I was formerly in H. M. 38th, and subsequently a Writer in the Office of the Collector of Moorshedabad. I went to England with Mr. Travers, and on my return to this country, upon application to Mr. McFarlan, I obtained my present situation.

Q. 2. Have you served many Warrants of Distress?—*A.* A good many in the different Divisions of the Town.

Q. 3. Can you say any thing about the Collection of Assessment?—*A.* I know only of the Collections under Warrants of Distress.

Q. 4. Do you serve Warrants on all classes of inhabitants?—*A.* Yes, on Europeans, Natives, and East Indians.

Q. 5. Upon what arrears of payment of the Tax, are Warrants of Distress issued?—*A.* I believe upon the arrear of fourth, or fifth Bill.

Q. 6. Do you find any difficulty in executing the Warrants?—*A.* I find no difficulty with Europeans, they settle by payment of the amount due, on the serving of the Warrant, as also do some East Indians, but some of the Warrants against that class I return as unexecuted, on not finding any property in the house. Of the great number of Warrants of Distress against the Natives, I have, under some of them, sold property, such as brass Lotahs, Vessels, Tuktaposes and other property, which I may have been able to take out of the premises, but in some instances I have found it difficult to get at any property of the Natives, because we cannot get in to the Zunanah, and the property of the defaulters are generally concealed there. The rich Baboos generally pay with some exceptions. I have two Warrants against Muddoosoodun Bannerjee, the son of Beer Bhuder Bannerjee,—Muddoosoodun is

employed in a Government Office (I believe the Calcutta Collector's) at a salary of 150 Rupees a month. In Mr. Trower's time, he promised to pay 150 Rupees from his next month's salary, which he never did. There are other Warrants now existing against him, but cannot be realised. He lives in a good house, which is assessed at a valuation of 70 Rupees per month. He has the appearance of a man of property. I had a Warrant of Distress in my hands, against Nubinchunder Bose, of Bulram Ghose's Street, for Rupees 335, which I could not realise, as I could not get into the premises, there is a balance of 1300 to 1500 Rupees against him. Once a Constable in attempting to enter his premises, to execute a Warrant, was beaten. There is a large balance due, against the house of the late Rajah Rajbullub. Warrants of Distress are out, but cannot be executed, in consequence of the Constables not being able to enter the premises.

No. 4.

Mr. John Street,
30th July, 1836.

Q. 7. What is the lowest amount, for which you have distrained property under Warrants?—A. For as small a sum, as twelve annas.

Q. 8. What are the costs of Distraining?—A. On all sums under 5 Rupees, Rupees 1-4,—on all sum from 5 to under 10 Rupees, Rupees 2-8,—on 10 Rupees and all sums above that, Rupees 5. There is a charge besides, for Ticca Peons, if left on the premises, at four annas a day each.

Q. 9. What remuneration do you get, for the execution of the Warrants of Distress?—A. I get no salary—I only receive the fees I have just now mentioned, upon realisation under Warrants, which amounts from 50 to 60 Rupees a month.

No. 5.

30th July, 1836.

William Andrews, Examined.

No. 5.

Mr. William Andrews,
30th July, 1836.

Q. 1. What are you?—A. I am a Constable, attached to the Assessment Department, and have been so, since May 1834. I am employed to serve Warrants of Distress.

Q. 2. Can you state any instance of difficulty, or obstruction in the execution of your duty?—A. In October 1834, on attempting to execute a Distrainment Warrant, on Premises No. 58, Buloram Ghose's Street, I was beaten by the direction of one Nobin Chunder Bose, by a large mob of about 150 men. I reported the circumstance to the Magistrates, and as the Warrant of Distress was directed against Seeb Chunder Bose, both of these men were summoned to appear before the Magistrates and fined.

Q. 3. In realising the Tax under Warrants of Distress, from what class of inhabitants, do you experience difficulty?—A. I have Warrants, both against Euro-

No. 5.

Mr. William Andrews,
30th July, 1836.

peans and Natives, mostly against Natives. I experience no difficulty in realising from Europeans, but with Natives I experience difficulties. As soon as they find out, that Warrants of Distress are out against them, they conceal their property in the Zunnanah, and we cannot get at them; some of the Natives against whom the Warrants are issued, are really poor, and have no means of satisfying the demand; in such cases, in returning the Warrant, I make remark of the circumstance on the back of them. (Corroborates Street's statement, as to remuneration.)

No. 6.

Mr. William Jackson,
30th July, 1836.

30th July, 1836.

William Jackson, examined.

Q. 1. What are you?—A. I am a Constable, attached to the Assessment Department, and have been so for the last five years.

Q. 2. Do you find any difficulty in executing Warrants of Distress?—A. In executing the Warrants against Europeans, I do not find any difficulty, the demand is settled by payment. I sometimes experience difficulty with East Indians. I have met with forcible obstruction, and concealment of property from that class. In executing the Warrants against Natives, I experience difficulty, and sometimes obstruction. An instance occurred last week. In executing a Distraint Warrant on Premises No. 31, Ramkanto Bose's Street, I took a Sirkar with me, and also the Thanadar and Chokeydars of the Division, under an apprehension of obstruction. On the Sirkar's entering the premises, some of the people of the house, shut up the gate, and, tying the Sirkar, began to beat him. Upon his crying out for help, I and the Thanadar pushed the gate, and on my attempting to enter, I was jammed between the shutters and bruised. The Thanadar and Chowkeedars, then with force pushed the gate open, and I was relieved. The Thanadar got hold of the Durwan of the premises, and dragged him to the street, but as the man was both old, and infirm, I told the Thanadar to let him go. Subsequently, one Cossinath Bose came on the spot, and said he would pay the demand of the Warrant, but no damage for the injury I had sustained. I told him he had better come before Mr. McFarlan, and do what he may say. I reported the case to the Police, and a Warrant was issued against Cossinath Bose. The case is still pending. I had orders from Captain Birch to apply for assistance to the Thanadar and Chokeydars of the Division, in cases of obstruction, or breach of peace.

Q. 3. You have stated that you sometimes experience difficulty and obstruction from East Indians, do you mean low country-borns?—A. Yes. (Corroborates Street, as to remuneration.)

No. 7.

30th July, 1836.

Joseph Shuldham, examined.

No. 7.

*Mr. Joseph Shuldham,
30th July, 1836.*

Q. 1. What are you?—*A.* I am a Constable, in the Assessment Department, and have been so, for the last two months.

Q. 2. Have you had any Warrants of Distress to execute?—*A.* Several, but no dispute or quarrel in the execution of them, except with one Baboo, at Dingabhangah, whose name I have in my Memorandum Book. He threatened to give me battle, in case I attempted to seize his Buggy. I have distrained some property, under the Warrants put into my hands.

No. 8.

3d August, 1836.

Juggomohun Soor, examined.

No. 8.

*Juggomohun Soor,
3d August, 1836.*

Q. 1. How long have you been employed under the Assessors of the Town of Calcutta?—*A.* Since 1795, and I resigned on account of old age, about two years ago.

Q. 2. Who was the Assessor in 1795?—*A.* Mr. Mackey; he was succeeded by Major Gall, who was succeeded by Mr. Laprimaudaye in 1808.

Q. 3. Upon what principle had Mr. Mackey formed his valuation of houses for the purpose of Assessment?—*A.* He valued them according to his best knowledge, and judgment, by examining the value of the buildings and land, separately. The value of the buildings and land, on the Main Roads, he used to take at a higher rate, than those in the inner Streets and Lanes, and upon those valuations he calculated interest, at the rate of six per cent, per annum, which he took as the annual produce of the premises, for Assessment. On the houses inhabited by the Proprietors, and less liable to become unoccupied, he used to make some allowance, that is, to calculate interest at something lower.

Q. 4. How long was the collection of House Tax, made upon Mr. Mackey's valuation?—*A.* Up to the year 1807.

Q. 5. How many petitions were presented by the house-holders against Mr. Mackey's valuation?—*A.* Only twenty-one.

Q. 6. When, and by whom, was a new Assessment made?—*A.* In 1809 by Mr. Laprimaudaye.

No. 8.

Juggomohun Soor,
3d August, 1836.

Q. 7. Upon what principle did Mr. Laprimaudaye form his valuation?—*A.* Mr. Laprimaudaye took Mr. Mackey's Book, as the foundation, made increases, where there were additional or new buildings, and reduction, where the property was demolished or went to ruin.

Q. 8. Did Mr. Laprimaudaye's valuation cause any encrease of Assessment?—*A.* Yes, a considerable encrease.

Q. 9. Mr. Laprimaudaye's Assessment you say was exactly on the same principle as that of Mr. Mackey's?—*A.* Yes, on the same principle. In cases of additional and new buildings, he made corresponding encrease.

Q. 10. How long was the collection of House Tax made upon Mr. Laprimaudaye's Assessment?—*A.* Up to 1819. There were encreases and reductions during that period, according to circumstances.

Q. 11. When was a new Assessment made after this?—*A.* In 1819 the Magistrates ordered a new Assessment of the Town, and told Mr. Laprimaudaye to complete it within six months; but in consequence of his pleading inability to go through the work within so short a period, four new Assessors were appointed by the Magistrates.

Q. 12. Can you state their names?—*A.* Yes; Mr. Sumner, Mr. Osborne, Mr. LeHerondale, and Mr. Burn.

Q. 13. Did they Assess the Town anew?—*A.* Yes, as they Assessed the houses in the different Divisions of the Town, they regularly forwarded their reports to Mr. Laprimaudaye, who made entries of the Assessment in his Book.

Q. 14. Did Mr. Laprimaudaye, in making up his Book, adopt the valuations of these Assessors?—*A.* Mr. Laprimaudaye adopted their valuation, and made up his Book accordingly, which was approved of by the Magistrates.

Q. 15. Upon what principle did these four new Assessors form their valuations?—*A.* They also took Mr. Mackey's old Book as their guide, and encreased and reduced upon their own guess.

Q. 16. Was there a Sircar with each of these Assessors, to assist them in forming the valuations?—*A.* Yes, I was with Mr. Sumner, my brother with Mr. Burn, and the other two Assessors had each a Sircar of his own.

Q. 17. Were the valuations of these Assessors correctly formed?—*A.* Mr. Sumner's valuation was accurate. He valued Rooploll Mullick's house on the Chitpore Road at Sicca Rupees 600 per month, now it is reduced to Sicca Rupees 300.

Q. 18. Did you assist Mr. Sumner in forming his valuation?—*A.* Yes.

Q. 19. In case of difference* of opinion between you and Mr. Sumner, what did he do?—A. We generally agreed in the valuation; sometimes we differed in a trifling amount, which was easily explained by further enquiry.

No. 8.
Juggomohun Soor,
3d August, 1836.

Q. 20. Did the Sircars of the other Assessors, assist them in forming their valuations?—A. The other gentlemen also used to take the opinions of their respective Sircars, but there was great confusion in their valuations.

Q. 21. Was the valuation of property under the new Assessment of 1819, increased comparatively with the former rates?—A. The first division was Assessed by Mr. Sumner and myself, and the valuation of property therein was encreased, and although the Assessment on property in the other three divisions, were also encreased, yet the premises were not properly valued, some were valued very much too high, and others very much too low: It was an inaccurate valuation.

Q. 22. Can you give any instance of the inaccuracy you have just mentioned?—A. Yes, Noyanchand Bose's house, in Soba Bazar Street, was formerly valued according to Mr. Mackey's Book, at Sicca Rupees 40 per month. There were additions to the building since the first Assessment, and Mr. LeHerrondale valued it at Sicca Rupees 250 per month, Noyanchand petitioned against the advanced valuation, and the Magistrates reduced it to Sicca Rupees 200 per month. At the sitting of the last Police Committee he again petitioned, and the case was referred to Mr. Laprimaudaye, who reduced the valuation, and fixed it at Sicca Rupees 80 per month.

Q. 23. You said Mr. Sumner had the Assessing of the first Division, and the Soba Bazar Street being within that Division, how came Noyanchand Bose's house in that Street, to be valued by Mr. LeHerrondale?—A. Mr. Sumner had too much on hand, and therefore transferred some part of his business to Mr. LeHerrondale, after the latter had completed the Assessment of his own Division.

Q. 24. Can you give an instance of under-valuation?—A. In Durmahatta Street there were four or five Golahs, which paid ground rent alone to the proprietor of the land, Sicca Rupees 110 per month; so the rent of those Golahs might fairly have been rated at Sicca Rupees 210 per month: They were valued by Mr. LeHerrondale at Sicca Rupees 50 per month.

Q. 25. Are there several instances of such inaccuracies?—A. Several.

Q. 26. What happened next?—A. Three of the new Assessors were discharged, and Mr. LeHerrondale and Mr. Laprimaudaye were retained as permanent Assessors of two Divisions each, viz. Mr. Laprimaudaye of the second and fourth Divisions, and Mr. LeHerrondale of the first and third. Mr. Laprimaudaye was put over the Division Assessed by Mr. LeHerrondale.

Q. 27. Were there many ~~petitions~~ against the new Assessment of 1819?—
A. Many, and almost all the petitions obtained reduction in the value of their premises.

No. 8.

Juggomohun Soor,
2d August, 1836.

Q. 28. Was there any new Assessment since that of 1819?—*A.* No, but there are considerable reductions in the value of premises, allowed by the Magistrates.

Q. 29. Did you ever attend the Police Office to give information to the Magistrates, on the subject of Assessment?—*A.* I used to attend the Police Office, but Mr. Laprimaudaye would not allow me to speak to the Magistrates.

Q. 30. Have you a fair knowledge of the value of houses, and huts, in the Town?—*A.* I have, having been employed in the Assessment Department for a long time.

Q. 31. Do you think the valuation put upon the houses and huts, are just, and proper?—*A.* I think the value at present put upon the huts, tiled and straw built, is proper, but some of the brick built houses are over valued. The prices at which the houses could have been sold at Mr. Mackey's time, cannot now be obtained for them—great many of the Native houses still pay the same Tax as formerly—the inhabitants of Baug Bazar and Shaum Bazar, are generally impoverished.

Q. 32. Subsequent to the new Assessment of 1819, did not some of the householders obtain reductions in the value of their premises, by shewing examples of the reduction of rent, of the houses in the European part of the Town?—*A.* Yes, Rooploll Mullick, and some others obtained such reductions, by the examples mentioned.

Q. 33. Can you suggest any improvement in the Assessment?—*A.* I think the amount can easily be increased by an augmentation of per centage, on all kind of Shops, without inconvenience.

Q. 34. Do you think the valuation of premises in Burra Bazar, is properly made?—*A.* Yes.

No. 9.

6th August, 1836.

Dyalchund Bonnerjee, examined.

No. 9.

**Dyalchund Bonner.
Jee, 6th August, 1836.**

Q. 1. What are you?—*A.* I am Bill Keeper in the Assessment Department, and have been employed in the Collector of Assessment's Office, since Feb. 1834.

Q. 2. Who was Bill Keeper before you?—*A.* Ramjeebun Bonerjee was the Bill Keeper before me, under Singhee Baboo, while he was Dewan of the Collector of Assessment's Office. In consequence of some confusion in the accounts, Singhee Baboo was removed from the Office. At that time, Captain Steel abolished the Office of the Bill Keeper, and resolved to deliver the Bills directly to the Collecting Sirkars, through the Serishtadar. I was first employed as the Head Mohurer, and in the month of September 1835, Captain Steel ordered that I should take charge of the Bills which were to be sent to the Summons Department. About that time the Serishtadar was also directed to take charge of all the Bills in the first instance, and in distributing them amongst the Collecting Sirkars, to take their Promissory Notes for the amount of the Bills delivered, in the form of the one I beg to submit (copy of the Note submitted) *Sa. Rs. 13,557-10-1, Division No. 7, Calcutta, the 1st February 1836.*

I promise to pay, on demand, to F. W. Birch, Esq. Collector of Assessment, or order, the sum of Sicca Rupees Thirteen Thousand, Five Hundred and Fifty-seven, and Ten Annas and One Gunda, for value received in Bills for collection of House Tax, which Bills I received in Cash.

(Signed in Bengallee) **KOYLASCHUNDER CHOWDERY,**
Sum of Thirteen Thousand, Five Hundred Fifty-seven,
Ten Annas One Gunda only.

Witness—Three in Number.

The Serishtadar entrusts the custody and distribution of the Bills to me. At the end of every quarter an account is made up with the Collecting Sirkars, the sums realised and remitted by the Justices being taken to Credit, a Balance is struck, and for the amount of which, as well as for the amount of the new quarter's Bills, separate Promissory Notes are taken from the Collecting Sirkars. These Notes are never returned to them cancelled, on adjustment of account.

Q. 3. Who compares the Bills remaining unrealized in the hands of the Collecting Sirkars, at the time of adjustment of their quarterly accounts?—*A.* Either I, or one of my two Sirkars, compare every Bill in the hands of the Collecting Sirkars, with the balance exhibited against them respectively, and with the list they furnish at the end of each quarter.

Q. 4. Do you again examine the Bills at the end of the year?—*A.* No, the Collecting Sirkars' accounts are always settled quarterly, and not at the end of the year.

No. 9.
Dyalchund Bannerjee, 6th August, 1836

Q. 5. Does the Collector of Assessment examine the unrealised Bills?—A. No, on an Adjustment of account taking place with the Collecting Sirkars in Bengallee, I get it translated into English, by one of the English Writers (an account in Bengallee and another in English submitted, and are as follows):

BENGALLEE ACCOUNT.

1st Division, 1st Number.—Ramsabuc Mookhopadhia, 39th Quarter's account, from November 1835 to January 1836, date 15th March, 1836.

CREDIT BILLS.			DEBIT BILLS.		
	Rs.	As. G.		Rs.	A. G.
39th Quarters Com- pany's Bills,	8.....12	3 12	38th Quarters ac- count Balance,	4204...9280	9 17
Sent in Nov. Dec. and Jan.	1897...4623	4 1	39th Quarters present Bills,...	2018...4810	9 4
Office Summons to Bissumbhur Chut- topadhya,	443....747	7 2			
Alter reduction Nov. Dec. and Jan. ...	56....158	13 14			
	2404...5541	12 9		6222..14091	3 1
Sent in February,...	403...1061	2 4	Deduct Collections, &c. Nov. Dec. and Jan.	2404...5541	12 9
From 1 to 15 March,	107....408	8 8			
	510...1469	10 12		3818...8549	6 12
Alter reduction	0.....0	0 0	Three Thousand	Sum of Eight Thou- sand and Five Hundred and Forty-nine Rupees Six Annas Twelve Gun- das only.	
Office Summons Feb.	2.....4	12 16	Eight Hundred		
Existing (on hand)	3271...6999	8 8	and Eighteen		
			Bills.....		
	3783...8473	15 16	Deduct existing Bills, &c.	3783...8473	15 16
To Dyalchund Bon- dopadhya on ac- count of Collec- tion of old Bills remitted,	35.....75	6 16			
			Dt.	35.....75	6 16

Q. 9. By the account you have submitted, it appears that the amount of outstanding, is principally formed of Bills of the recent quarters, is that about the average of all the outstanding Bills?—A. Yes.

No. 9.
Dyalchand Bonnerjee, 6th August, 1836.

Q. 10. What is the duty of the Serishtadar?—A. He superintends the Collecting Department generally.

Q. 11. Are there any European Collectors?—A. No, the whole collection is entrusted to the Native Sirkars of the Divisions.

Q. 12. Do you ever deliver the Bills to any one but the Collecting Sirkars?—A. Yes, upon Distress Warrants being put into the hands of Constables, if they require the Bills for the realisation of the amount ordered to be levied, I deliver those Bills to them. There are two European Examiners of unoccupied premises, who sometimes take the Bills of Assessment for those premises, the notices of vacancy of which are referred to them for report, and after making their remarks upon the back of the Bills, they are returned to me in the course of a day or two.

Q. 13. Upon what arrear of payment, and under what circumstances are the Processes of Summons or Distraint Warrants issued by the Magistrates against defaulters?—A. When four or five Bills are in arrear, the Collecting Sirkars report the circumstance to the Serishtadar, who takes the Bills from them, and makes his report to the Collector. The Collector directs him to issue Office Summons or Notices against the defaulters to pay in the amount within a week. A Writer of the name of Tarruck Sikdar makes out the Summons, and when signed by the Collector they are delivered to the Summons Sirkars, to be served upon the parties they are directed to. Many of the parties attend on the appointed day at the Collector's Office, and pay off the claim. The Bills unsettled on that day remain with me, and Rajkisto Set is directed to make out Summonses for signature of the Magistrates for the amount of those Bills. As soon as the Summonses are drawn out and signed by the Magistrates, they are delivered to the Summons Sirkars for the purpose of being served on the defaulters. On the day appointed for their appearance, Rajkisto Set attends the Police Office with the Books, and I also attend with the Bills. I receive the amount as realised in the Police Office under the Summons, and enter in the Bengallee Summons Books the orders passed by the Magistrates on the occasion, for the unrealised balance of the Summons, the Magistrate's order either Remission or Warrant of Distress, according to the circumstances of the case.

Q. 14. Do you attend to any thing else besides what you have stated?—A. I write in Bengallee the Quarterly Statements of Collections, Remissions and Balances, and hand them to Rajkisto Set to be translated into English.

No. 10.

6th August, 1836.

No. 10.
Parbutty Churn
Mookerjee, 6th Au-
gust, 1836.

Parbutty Churn Mookerjee, examined.

Q. 1. What are you?—*A.* I am Serishtadar of the Collector of Assessment's Office, and have been so for the last four years.

Q. 2. What Security have you given?—*A.* To the amount of Ten Thousand Rupees—Bissonauth Mottyloll is my Security.

Q. 3. What floating Cash Balance of the Assessment Collections remains in your hands?—*A.* I have generally a balance of collection money, of about Three or Four Thousand Rupees in my hands, and the Outstanding Bills in the hands of my Bill Keeper and the Collecting Sirkars, amount to about One Hundred and Fifty Thousand Rupees.

Q. 4. Where do you keep the floating Cash Balance?—*A.* In an Iron Chest in the Collector of the Assessment's Office.

Q. 5. What Security do the Division Collecting Sirkars give?—*A.* From Eight to Ten Thousand Rupees each.

Q. 6. What sort of Securities, and who examines and accepts them?—*A.* The Collecting Sirkars give Securities of Land Owners, either in Calcutta or in Muffusul. When a Security is offered, I examine it, and report to the Collector, who in his discretion either accepts or rejects it. Captain Steel always used to enquire after, and examine the offered Security himself.

Q. 7. What amount of Collection Money is remitted to the General Treasury from time to time, and how often?—*A.* We remit the Collection Money to the General Treasury from Two to Five Thousand Rupees, at intervals of two or three days.

Q. 8. Do you make Disbursements out of the Collection Money from your Office?—*A.* Yes, we pay the Establishment, Commissions, Office Rent and Contingent Charges, from the Collecting Funds.

Q. 9. What Salary do you get?—*A.* Seventy Rupees a month, out of which I pay Fifteen Rupees to two Sirkars, one of whom assists the Bill Keeper and the other occasionally goes out with Bills.

Q. 10. Do you think the collection can be improved?—*A.* If I get an Establishment of two or three more Sirkars I think the collection will be improved. My reason for thinking so, is this—the Division Collecting Sirkars have to go to many places for collection, and they cannot wait a long time, or frequently upon those who

No. 10.
Parbutty Churn
Mookerjee, 6th Au-
gust, 1836.

are in the habit of putting off payment. They are obliged to go to others, and especially to those who make prompt payment, with the view of getting money for remittance to the Collector's Office, because unless they remit from time to time the sums they are expected to send, the Collector imposes a fine upon them, consequently a large number of Bills accumulates against the unwilling pay-masters, and it becomes still more difficult to effect their realisation. If I could get these Bills put into the hands of extra Sirkars, to press payment, they could be more easily and promptly realised, than they are at present.

Q. 11. If Summonses are issued upon the arrear of one Bill, instead of four or five, as at present, do you think the collection will be improved?—A. Undoubtedly it will be a good plan. The Collector himself told me that it would be a good plan.

Q. 12. Why is it not adopted then?—A. We have not adopted it, because there used to be formerly in some instances ten or twelve Bills in arrear against one number, now it is reduced to one, two, three and four Bills.

Q. 13. Who authorizes the keeping back of the Bills in arrear?—A. Some times when the Collecting Sirkars are unable to realise regularly, I have authorized them to keep the Bills in arrear, to the extent I have mentioned.

Q. 14. If the system of the process of Summons upon the arrear of one Bill is adopted, do you think any mischief will result therefrom?—A. There will be no mischief to those who are able to pay, but those that are not able to pay must suffer. The favor of the Assessors towards the poor is proverbial. They have reduced the value of Chandney Bazar, and in many instances increased that of ruined premises.

Q. 15. Do you think the system will be an improvement?—A. Yes, as some times even the rich men keep back the payment of Bills, but there are men really poor who are quite unable to pay.

Q. 16. Do you think upon strict collection, the amount may be increased?—A. Yes.

Q. 17. To what extent?—A. I think under strict collection, by Summons, &c. there will be an increase from Eight to Ten Thousand Rupees per Quarter.

Q. 18. Will there be any mischief in adopting the system of strict collection?—A. No.

No. 11.

20th August, 1836.

Captain Frederick William Birch, examined.

No. 11.

Captain Frederick
William Birch,
20th August, 1836.

Q. 1. How long have you been the Superintendent of the Police of Calcutta?
—A. Since 1st January, 1836. I succeeded Captain Steel, who held the appointment from the year 1831.

Q. 2. Is the Collection of Assessment a part of the duties of the Superintendent of the Police?—A. Yes, the Superintendent of the Police was appointed Collector of Assessment, during the administration of Lord William Bentinck.

Q. 3. Is there always a large outstanding balance of the Assessment, from year to year?—A. Yes.

Q. 4. It has been stated in evidence here, that at the end of each quarter, when the Collecting Sirkars' accounts are adjusted, and balance struck, the uncollected Bills on hand, corresponding with that balance, are examined by the Bill-keeper of your Office. What adequate check is there against the Bill-keepers or the Collecting Sirkars, in connivance with each other, keeping back a part of the Collection money?—A. At the end of each quarter the Collecting Sirkars are called in, their accounts adjusted, and the Bills on hand of each, are examined with the balance exhibited against him, and if the Bills produced do not correspond with the balance, the Bills are taken from him altogether. It is not impossible for the Bill-keeper or the Collecting Sirkars, to keep back a part of the Collection money in connivance with each other. There is certainly no adequate check against this. The subject never struck me before in the same light which it does now, and I shall in future make arrangements for a proper check. I have always called upon the Collecting Sirkars for the production of the uncollected Bills, and trusted to the Serishtadar to have them properly examined with the balance. There are however the checks of the Serishtadar and myself, and I consider that I must place some confidence in my subordinates.

Q. 5. It has been further in evidence, that when four or five Bills are in arrear, a report is made to you of the circumstance, by the Serishtadar, for the purpose of taking out process against the defaulters, don't you think it would be proper, that such report should be made to you on the arrear of one Bill?—A. Certainly, it would be a very proper course. If the report is made, and process taken out on the arrear of one Bill, the collection would be more easy. It would also be a convenience to the payer, and if it is understood to be the practice to have the process out on the arrear of one Bill, the necessity of frequent process would not exist, and in my opinion this would be a more effectual and just course.

Q. 6. Why don't you adopt it?—A. It has been found impossible to adopt it as a general rule, as yet, in consequence of the many heavy arrears, but I am bringing it into use as speedily as circumstances will allow. My present intention is to

No. 11.

Captain Frederick
William Birch,
20th August, 1836.

enforce payment on the arrear of the first Bill where there is no old outstanding, and to wipe off the whole of the old Bills, under process by realisation, as far as possible, and by cancelling those that are irrecoverable. This would make the account more clear than it is at present.

Q. 7. Do the Distraint Constables experience any difficulty in recovering the levy under Distress Warrants from the rich Baboos?—A. They do ; the execution is sometimes obstructed by force.

Q. 8. What course would you recommend to be adopted for the efficient execution of Distress Warrants?—A. While defaulters have the power of removing their property into the Zananah Muhul, it is impossible for us to get at them. Two modes appear to me calculated to remove this difficulty,—one the power of entering the Zananah, and the other the power to sell the doors and windows. The Zananah is a mere bug-bear. If the defaulters knew that the Magistrates have power to authorize the entrance, they would pay the demand without making difficulty, and I think there would be no injustice in entering the Zananah, if the parties were aware of the existence of such a power. No Officer or Constable ought to have the power of entering the Zananah, without the authority of two Magistrates. But besides these, the best and specific course of removing all difficulties to the recovery from defaulters, is the power of proceeding against them in the Court of Requests, by the process of which, their persons could be taken.

Q. 9. If the law gave you power to take the person of the defaulter after the return of the Warrant of Distress, don't you think that would be a better remedy?—A. Decidedly so, the process would then be more easy and save delay. If the Warrants of Distress were made more general to seize the goods of the defaulter wherever found, instead of only those upon the premises in arrear, as at present, the levy would be more easily recoverable from rich men.

Q. 10. Can you suggest any other mode of efficient collection?—A. I have turned over in my mind every difficulty which suggested itself. The Native Sirkars have power to make money by extortion, that cannot be avoided. The Natives generally have prejudices, or are afraid to come to Court, and taking advantage thereof, I believe the Collecting Sirkars do extort money from those who are not prompt paymasters, by threatening to report the arrear to the Collector, and the consequent process, unless something was paid to them for forbearance.

Q. 11. How many Distraint Constables are there?—A. Four—all Europeans ; the best of them by name Street, makes from one hundred to one hundred and thirty Rupees a month in costs arising in the execution of Distress Warrants. The second, Andrew, about ninety ; the third, Johnson ; and the fourth, Shulldham, I do not think make more than forty Rupees a month each.

Q. 12. Is that the only remuneration they get?—A. That is the whole of their support ; they get no salary ; Street keeps two Buggy Horses to enable him to perform his duties efficiently,

Q. 13. Have they any other duties to perform except the execution of Distraint Warrants?—*A.* No; Street within the last month is appointed by me to a vacant situation of an Examiner of empty houses, at a salary of one hundred Rupees a month, but since the appointment, the Chief Magistrate has intimated, that he must not levy by distress, in the Division in which he is the Examiner.

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Captain Frederick
William Birch, 20th
August, 1836.

Q. 14. Do you think the mode of paying the Distraint Constables by fees or per centage upon the amount levied by distress, is the best that can be adopted?—*A.* Yes; because they then have greater incitement to exertion.

Q. 15. Do you think the Assessment of the Town is fairly made?—*A.* I do not think it fair to Tax the poorer class in the same ratio with the rich. I think, if yearly, during the month of December, an Estimate of the Police expenses for the ensuing year were made, and Assessment levied according to that, it would be less liable to objection. I mean the House and Abkaree Taxes so raised as to meet the whole expenses of the Police. The Assessment in that case of course would vary and be greater than at present,—no class is to be exempted. The huts are now assessed in a lump of several, as one number.

Q. 16. Can you offer any further observations upon the whole matter under consideration?—*A.* I am now taking a correct Census of the population and the houses of Calcutta; when it is completed, which I hope will be in a few days, I will submit the Statement to the Committee, with such observations as may then occur to me.

Q. 17. Is the collection from all classes made by Natives?—*A.* Yes; but I think it would be a better mode to employ both Natives and Europeans. Natives in the first instance, and on their failure Europeans, and I am about to make the experiment.

Q. 18. How many Sirkars do you employ for collection in the Four Divisions?—*A.* Seven; who employ others under their own control—about twenty-four more.

Q. 19. What remuneration do they get?—*A.* One and a half per cent. on the sums actually collected by them.

No. 12.

David McFarlan, Esq.
22d August, 1836.

No. 12.

22nd August, 1836.

David McFarlan, Esq. examined.

Q. 1. Are you the Chief Magistrate of Calcutta?—*A.* Yes, and have been so for about six years.

Q. 2. As the Chief Magistrate, have you specific control over the Assessment and the Collector of Assessments' Departments?—*A.* I have no specific control over the Assessors or their appointment. The Magistrates in Sessions appoint them, and have control over them. The Superintendent of Police, under orders of Government, is the Collector of Assessment, and is not under my control. In fact, as Chief Magistrate I have no judicial control over him legally, but practically I have, as the petitions received by the Clerk of the Peace for reduction of Assessment, &c. come to me, and, as Chief Magistrate, I am bound to see that the peoples' complaints are attended to.

Q. 3. Do you exercise no control over the Assessors or the Collector of Assessment?—*A.* If I saw that the Assessors were not doing their duty, I would bring it to the notice of the Sessions, and in the same way if I found slackness in the collection, I would send to enquire the cause, thus practically I have some control. The Quarterly Statements of Collections I send up to Government, and it is my duty to point out defects, explain the cause of short collection, and recommend improvements.

Q. 4. Do the other Magistrates exercise any control over the Assessment Department?—*A.* They do not. Government do not expect them to do so, but I am always happy to accept their assistance, if offered.

Q. 5. It appears, that the two Assessors employed, perform their duties in the mornings and evenings. Do you think that the time devoted is sufficient to go through the business efficiently?—*A.* We require the services of two Assessors. The Sessions are now held quarterly, while formerly they used to be held once a year, or once in two years.

Q. 6. We wish to know, whether the time allotted by the Assessors Mr. Carr and Mr. Graham, is sufficient for the purpose of performing their duties efficiently. In the day time Mr. Carr is engaged in a Mercantile House, and Mr. Graham as an Attorney of the Supreme Court. Whether with those occupations they are able to perform the duties of Assessors properly?—*A.* The Assessors take two Divisions of the Town each. They go out in the mornings and evenings, assisted by Sirkars. The Assessment I think is properly made. I am not aware of premises being under-valued, and in cases of over-valuation, one can rely upon the parties seeking reduction themselves. I think if you had one Assessor, and he was to give the whole of his time to the business, the thing would be hurried. In 1822, when Mr. Shakespear was Chief Magistrate, I proposed to Government that there should be two Assessors instead of one.

Q. 7. The question is not asked on the principle of economy. We wish to be informed whether the two Assessors devoting only a part of their time for Assessment, can perform the duties efficiently?—A. If we could get a man to devote the whole of his time, I think the duties may be performed by one. A man at a salary of three or four hundred Rupees, to devote the whole of his time, would not I think be sufficiently paid. The business is not ministerial at all, it is in a great measure judicial. In a multitude of cases there is nothing to go upon but opinion. In such cases, it is of first importance that the person who delivers the opinion should be above suspicion, if you increase the salary to six hundred Rupees you might get a proper person to devote the whole of his time to the business, and he might probably perform the duties as efficiently, or as well as at present; but we should be liable to embarrassment if he were sick. At present one Assessor assists the other on occasions of sickness, or necessary absence.

Q. 8. Have you any suggestions to offer upon the present system, or for its improvement?—A. No; I think the system is good on general principles. I should be against double employment, but in this particular case of double employment, the arrangement is probably the cheapest and best.

Q. 9. The Superintendent of the Police, is ex-officio the Collector of Assessment. The Bills for Assessment on being signed by him, are delivered over to the Serishtadar or Bill-keeper of his Office, for the purpose of being distributed to the Collecting Sirkars. At the end of each quarter, the Collecting Sirkars render their accounts, the balances of which are examined with the Bills on hand, by the Bill-keeper or one of his under Sirkars, and the Bill-keeper makes his return of the correctness of the accounts. What adequate check is there against the Bill-keepers making a false return?—A. It is the duty of the Collector of Assessment to examine the uncollected Bills. I don't see any other adequate check but the Collectors own examination: he is responsible for the Bills. I have always been in the habit of taking statements furnished by the Collector as correct returns. It is my opinion that the Collector ought to see, and be thoroughly assured, that the stated arrear, really corresponds to the Bills on hand.

Q. 10. It has been in evidence, that, under the present system, the Distress Warrants are not sufficiently effectual in the recovery of the levy, because the Executing Officers could not get property to seize, either in consequence of its being concealed in the Zunanah, or of obstruction by force. What remedy would you propose for this?—A. I was urged by Captain Steel to get a law passed, authorising by its process, the enforcement of payment by taking up the persons of the defaulters, but I thought this would be a very hard measure. I considered the authority to enter the Zunanah would be the best remedy, which again Captain Steel thought might be attended with frequent disturbances. I am not aware of successful obstruction by force.

Q. 11. Under these circumstances, what appears to you the advisable remedy?—A. I would try the experiment of entering the Zunanah first, before I recommend the taking up the persons of defaulters.

No. 12.

David McFarlan, Esq.
22nd August, 1836.

Q. 12. You would only grant the power of entrance to the Zunanah, where the recovery by the present ordinary mode of process fails?—A. The Warrants of Distress should be granted as at present, in the first instance, and if returned unexecuted, then the authority for entering the Zunanah may be given.

Q. 13. Don't you think that it would be an improvement in the collection, and at the same time merciful towards the poorer class of Tax-payers, if the processes of Summons and Distress, were to issue on the arrear of one Bill, instead of four or five as at present?—A. I have always been aiming to have process out on the arrear of the first Bill. I have no doubt it would be an improvement in the Collection, as well as merciful towards the poorer Class of Tax-payers, to have the process out on the arrear of one Bill, instead of allowing them to accumulate to two or three; but in that case the expenses of Distress would be a heavy penalty.

Q. 14. It has been in evidence that Distrain Warrants are executed by European Bailiffs, of whom there are four. They are paid by Costs or Commission levied upon the defaulters, is that the best mode of remuneration?—A. Yes. It excites them to exertion. The Warrants of Distress, even including those which I consider as almost irrecoverable, are sought by them with eagerness.

Q. 15. It is stated by Captain Birch, that Street, one of the Distraining Bailiffs, who makes by fees to the extent of one hundred and thirty Rupees a month, has been lately appointed by him to a vacant situation of Examiner of empty houses; but you have intimated that he must not Distrain Property in the Division of which he is the Examiner. What is your reason for the prohibition?—A. Because he has an interest in falsifying his report. Where a house is actually empty he might say it was occupied. This false report might get him in the end, fees for a Warrant of Distress.

Q. 16. Do the Magistrates decide the remission of Assessment of empty houses by the Examiners' reports?—A. Yes. If the party contests the question of empty or not empty, a Magistrate would rely on the oath of the Examiner.

Q. 17. What would you suggest for the improvement of the Collection?—A. In addition to the power of entering the Zunanah, a power to Distrain Carriages and other Property of defaulters, wherever found, would be very useful. Indeed I think we have that power at present, though it is not often exercised.

Q. 18. Have you any suggestions for improving the mode of Collection? Captain Birch states his belief that the Collecting Sirkars extort money from the Tax-payers?—A. No case of the Sirkars taking money from the inhabitants has come before me.

Q. 19. You have to deal with Sessions.—When the Agency Houses failed in 1830, a considerable fall took place in the value of House Property in the European part of the Town. The Tax on some of the Native Houses was also reduced. It is stated, as an instance, that Rooploll Mullick's house on the Chitpore Road, which

was formerly valued at Sicca Rupees Six Hundred per month, was, subsequent to the time mentioned, reduced to Sicca Rupees Three Hundred per month, while the valuations of other houses in similar situations continued unchanged. Upon what principle was the valuations of the Native houses reduced?—*A.* I examine the several cases as they are brought before me, the reduction in the valuation of the house alluded to, was made upon application of the owner, supported by the reports or opinions of the Assessors, who act under oath. There was a general reduction in the value of Property in the European part of the Town, and I should conclude that the value of houses in the Native part of the Town also fell—indeed the general depreciation of Landed Property was notorious,—witness the purchases in that part of the Town by the Lottery Committee, and the prices that are now offered for that land, greatly improved as it is. There were a great number of petitions from the different Divisions of the Town, and the Assessors were compelled to admit the reductions applied for, some on specific and undoubted evidence of fall in value, and others on their own estimate.

No. 12.

David McFarlan, Esq.,
22nd August, 1836.

Q. 20. Then the value of some of the houses of Native Gentlemen was reduced in consequence of general depreciation of Landed Property?—*A.* Yes, there has been reduction of Assessment in the Native part of the Town, owing to the depreciation of Landed Property since 1830. The more strict method of collection introduced, and the more frequent and ready means of appeal led people to look into the matter of the Assessment. The reduction was not made upon general principles, every case was decided upon on its own particular merits, and no reduction was made without application.

Q. 21. Is there not some difficulty in getting evidence respecting the value of rich Natives' houses?—*A.* Yes, extreme difficulty; they are scarcely ever let, and the Assessors must form a general estimate.

Q. 22. In cases of over Assessment, is the party complaining put to any expense in presenting a petition to the Sessions for redress?—*A.* All persons complaining, even those who pay a Tax of Two Annas, must, in presenting petitions to the Sessions, pay a fee of One Rupee to the Clerk of the Peace upon each petition. If the party is the owner of several houses or shops numbered separately, he must present a separate petition for each, and pay the prescribed fee on each occasion.

Q. 23. What would you suggest for this?—*A.* To receive the petitions without fee, and leave it to the Magistrate to levy it, if he found the application frivolous and without merits.

Q. 24. Have you any suggestions to offer generally upon the Assessment, or Collection?—*A.* A question is now before Government; viz, to allow a single Magistrate to issue Warrants of Distress; so also is that of requiring each Division Magistrate to issue Warrants of Distress in his own District. The Collector would then be bound to have a Warrant out for all arrears, even of one quarter. In a letter to Government of the 28th April last, I proposed that the Collector should be allowed only two per cent. on Two Lacs of Collection, and five per cent. on all, over that sum. The object was of course to draw the strong attention of the Collector to the more difficult Collections.

No. 12.

David McFarlan, Esq.
22nd August, 1836.

I have several times seriously thought, that it might be an advantage to do away with the demand of the Collecting Sirkar, to make it imperative by Law on the Tax-payers to lodge the Tax by a certain time in an Office in their Division. The habits of the Country are certainly opposed to this,—people here require to be dunned, before they pay the smallest sum. If the Law could assist in removing such habit, it should. A power might be given, in any new Enactment, to the Collector to try that system. It would do away with the chance of corruption on the part of the Tax Collector.

No. 13.

Kumulakant
Gangoolly, 31st Aug.
1836.

Abkaree.

No. 13.

31st August, 1836.

Kumulakant Gangoolly, examined.

Q. 1. What are you?—*A.* I am a Writer in the Abkaree and License Department.

Q. 2. Who is in charge of the European Distillery and License Department?—*A.* Mr. Blaquiére.

Q. 3. How long have you been employed in the Abkaree and License Department?—*A.* Since 1802.

Q. 4. What is your duty?—*A.* To write accounts.

Q. 5. How many persons are employed in the Abkaree Department?—*A.* Ten or twelve persons.

Q. 6. All Writers?—*A.* No, there are only three Writers—myself, Bissonauth Doss and Ruheemkhan, and seven or eight Sirkars.

Q. 7. What are the Writers employed at?—*A.* In writing passes, keeping accounts, conducting current business and books.

Q. 8. What salary do the Writers get?—*A.* I get Forty Rupees, and the others Twenty and Sixteen per month.

Q. 9. What salary do the Sirkars get?—*A.* The Cash-keeper gets Forty Rupees in the License Department, his two Mohurers, one Fifteen and the other Ten, Podar Seven, and Duftory Six Rupees a month.

Q. 10. Is not Mr. Andrew employed in the Abkaree Department?—*A.* Yes, he is Clerk of the License Department.

Q. 11. What salary does he get?—A. Two Hundred Rupees a month. He used to get One Hundred Rupees more from the Distillery Department, which has ceased.

No. 18.
Kamulkaat
Gaugooly, 31st Aug.
1836.

Abkaree.

Q. 12. What is the amount of the whole Establishment per month?—A. Five Hundred and Thirty-one Rupees.

Q. 13. What does Mr. Blaquiere get per month?—A. He gets a Commission of two and a half per cent. on the Collection, which averages monthly under Three Hundred Rupees.

Q. 14. What is your particular duty?—A. I keep Register of Licensed Venders, both wholesale and retail, Register of Taury and Gunja Shops, make up English Monthly Accounts, and write the English Cash Book. I used to keep the Register Book of Duties on Gin, Brandy and foreign Arrack, imported by Sea, which is given up, since June last.

Q. 15. Do you ever yourself go to the Arrack and Rum, and the intoxicating Drug Shops?—A. No, I never went to these shops.

Q. 16. Is there any check against the imposition of the Venders?—A. I do not know.

Q. 17. Who receives the Tax, and grants receipts?—A. The money is paid to the Cash-keeper, who grants receipts.

Q. 18. Does the Cash-keeper collect the whole of the Abkaree Tax?—A. Yes.

Q. 19. Does not Mr. Blaquiere sign the receipts?—A. No.

Q. 20. Does he sign the Licenses?—A. Yes.

Q. 21. The Licensed Arrack Shops have the privilege of retailing Twelve Gallons Bengal Arrack per day—Is there any check against their retailing more than that quantity?—A. There is no check against that.

Q. 22. How many Bengal Arrack Shops are there paying the Tax of Six Rupees a day?—A. Fifty-three.

Q. 23. Whence do these Shopkeepers bring the Arrack into Calcutta, and in what quantities?—A. They are permitted to bring daily fifty-three Banghys of two pots each, and each pot containing about Six Gallons, from a Distillery out of Calcutta. I forget the name of the place.

Q. 24. To whom does the Distillery belong?—A. To Mr. Blaquiere.

No.
Kamulkant
Gangooly, 31st Aug.
1836.
Abkarree.

Q. 25. By whom is the Arrack distilled there?—A. By the Proprietors of the fifty-three Shops I have mentioned.

Q. 26. Who pays for the buildings of the Distillery?—A. The same Shopkeepers.

Q. 27. Do these Shopkeepers take to the Distillery their own materials for distilling?—A. Yes.

Q. 28. Is any Bengal Arrack brought into Calcutta from any other place than the Distillery you have mentioned?—A. I am not aware of any Bengal Arrack coming to Calcutta, but from the Distillery I have mentioned.

Q. 29. How many Licensed Bengal Rum Shops are there, paying the Tax of Five Rupees per day?—A. Eight.

Q. 30. What quantity of Rum are they allowed to retail?—A. Each Shop has the privilege of retailing three hundred and eighty gallons Bengal Rum per month.

Q. 31. Do they sell European Spirits also?—A. Yes, they sell Gin, Brandy, and foreign Arrack, for which they pay the wholesale Tax of Four Rupees per quarter.

Q. 32. Suppose they were to sell more than three hundred and eighty gallons of Rum per month; what would you do?—A. When they wish to sell more, they come to our Office, and declare their intention, and pay the Tax according to the quantity they wish to sell.

Q. 33. Whence do they bring the Rum into Calcutta?—A. From a Distillery at Sookchur.

Q. 34. Does this Distillery belong to the Shopkeepers?—A. No, it belongs to other people.

Q. 35. Is there no other Rum Distillery but the one you have mentioned?—A. There is a Distillery at Bandel, one at Fort Gloster, and one at Dhoba, in the District of Burdwan.

Q. 36. Suppose the Rum Shopkeepers were to bring to Calcutta, in the course of one month, a larger quantity of Rum, than the three hundred and eighty gallons they have the privilege to retail; and do not choose to give you the information, how could you know of this?—A. We cannot know, if they do not choose to give us the information; but the Custom House Chokey is a check against excessive importation.

Q. 37. Are these Shopkeepers at liberty to sell any quantity of Gin, Brandy and foreign Arrack, for the wholesale Tax of Four Rupees per quarter?—A. Yes.

Q. 38. Do you compel them to buy Bengal Rum at the Sookchur Distillery?
—A. No.

Q. 39. How many Distilleries are there at Sookchur?—A. Three.

Q. 40. Do you know to whom they belong?—A. To Govind Shaw, Rajkissore Mullick, and Gooroopersaud Shaw.

Q. 41. Do the Shopkeepers bring the Rum into Calcutta, under passes from the Abkaree Department?—A. Yes, when they wish to import Rum into Calcutta, they apply for a pass to the Abkaree Department. The pass being granted, it is taken to the Distillery, and the quantity mentioned therein, is imported, accompanied by one of our own peons from the Distillery.

Q. 42. How many peons are employed in the Abkaree Department?—A. Sixteen in the Bengal Distillery Department, and thirty-four or thirty-five, in the European Distillery Department. (The witness is desired to produce a list of the Establishment.)

Q. 43. What Tax do the Punch Houses pay?—A. The Punch Houses used to pay Five Rupees per day; but since May last they pay only a Rupee a day.

Q. 44. Do the European Shopkeepers pay any Tax?—A. Mackenzie, Lyall and Co. pay the wholesale Tax of Four Rupees per quarter.

Q. 45. Do Moore, Hickey and Co. pay any thing?—A. No.

Q. 46. How many Taury Shops are there, and what Tax do they pay?—A. There are thirty-eight Taury Shops, and they pay a Tax of One Rupee per day each.

Q. 47. How many Gunja Shops, and what Tax do they pay?—A. Eight Gunja Shops paying Two Rupees a day each.

Q. 48. How many retail Punch Houses are there?—A. Ten.

Q. 49. Are the Taury and Gunja Shops allowed to sell as much as they like?
—A. Yes.

Q. 50. What is the cost of a cup of Taury?—A. Five or six large pots of three gallons, sell for a Rupee.

Q. 51. How often is the Tax paid into the Abkaree Department?—A. It is paid daily.

Q. 52. How is it paid?—A. The Shopkeepers come to the Cash-keeper's Office and pay.

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Gangooly, 31st Aug,
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Q. 53. If they omit to come; what is done?—A. We send peons after them, and bring them up to the Office; if they still dont pay, we keep them in custody for some time in the Police Office, but we cannot do any thing more.

Q. 54. May there not be Shops which do not pay the Tax?—A. There may be such Shops, but I think not. There are peons in the Abkarce Department who look after the Shops.

Q. 55. Is there more than one Shop belonging to one person?—A. Yes.

Q. 56. Name some of the principal Shopkeepers of all classes, and the situations of their Shops?—A. Of Bengal Arrack, Rammohun Shaw has one shop at Colootollah; Ramkaunt Shaw has three, at Bow Bazar, Machowa Bazar and Chowringhee; Juggomohun Shaw has two, at Cullinga and Fenwick's Bazar. Of Bengal Rum, Goorooopersaud Shaw, has one shop, Koonjoo Baharry Shaw, one, Sunatun Mundul, one, Okoor Shaw, one, all at Radha Bazar; John William Atwater, Alexander Simpson, and Robert Harding, keep Punch Houses. Of Taury, Kyamuddeen has two shops, at Durumtollah and Tiretta Bazar. Of Gunja, Jumma Khan and Dhomee Khan, have two shops, at Burra Bazar and Matchowa Bazar, Bunmolly Banay, has one shop at Matchowa Bazar.

Q. 57. Name the Sirkars and Peons stationed at the Distilleries?—A. At Koolia Distillery, Sirkar Juggomohun Bose, Jemadar Roheem Khan, and four Peons. At Sookchurn Distillery, Sirkars Nobocomar Bonerjie and Goorooopersaud Bonerjie, and twelve Peons.

31st August, 1836.

RAMJOY MOOKERJEE, *examined.*

Ramjoy Mookerjee,
31st August, 1836.

Abkaree,

Q. 1. What are you?—*A.* I am Cash-keeper in the Abkaree Department.

Q. 2. How long have you held the situation?—*A.* I am employed in the Police, for forty-three or forty-five years. In the Abkaree Department, three or four years before Mr. Blaquiére took charge of it.

Q. 3. How is the Tax in the Abkaree Department paid?—*A.* When the Venders come to the Police to pay the Tax, they go up to the English Office first, and inform Mr. Andrew or his Assistant, that they have come to pay the money. They then come down to my Office, and pay the money to the Podar. The Mohurer enters the amount in the Book, and grants receipts.

Q. 4. Don't you sign the receipt?—*A.* No.

Q. 5. Are the receipts of money compared with the License Book?—*A.* The Writer in the English Office and my Mohurer compare the account of Licenses and Receipts.

Q. 6. When money is paid, is any memorandum of it made on the back of the License?—*A.* Formerly from the English Office, such memorandum used to be made, but now they have given up that system. They even do not grant Licenses now. They merely enter the names of the Venders in a book.

Q. 7. Are there now no Licenses granted at all?—*A.* Sometimes a License is granted.

Q. 8. What is the amount of your daily receipt?—*A.* The average monthly receipt is from twelve to fourteen thousand Rupees.

Q. 9. We want to know the amount of daily receipt?—*A.* The money is not paid daily. Sometimes, I do not receive a Rupee for ten days. Some of the Shopkeepers are in arrear for two, and some for three months—generally they make payments, a little before the close of the month.

Q. 10. Do they not pay daily?—*A.* No. The Peons go about them, and the payments are made about the end of the month, and there are arrears, as I have mentioned.

Q. 11. Kumulakant Gangooly has stated that the Shopkeepers pay the Tax daily. What do you say to this?—*A.* He is wrong. They do not pay daily. (The witness is desired to produce his Bengallee Cash Books.)

No 14.

Ramjoy Mookerjee,
31st August, 1936.

Abkaree.

Q. 12. Do the Shopkeepers give any security for securing the payment of the Tax?—A. They used to do so before, but not now.

Q. 13. Why is it discontinued?—A. I do not know.

Q. 14. What floating cash balance have you generally on hand?—A. The money does not come in at the beginning of the month. The sum accumulates about the end of the month, and is remitted to the General Treasury, by the middle of the following month.

Q. 15. Where does the money remain in the mean time?—A. In the Police Office, in an iron chest.

Q. 16. Under your custody?—A. Under my lock and key.

Q. 17. How are the Shopkeepers' accounts adjusted?—A. The accounts are kept in the English Office. I only keep an account of the money paid to me.

Q. 18. Do you ever lose money by non-payment of Shopkeepers.—A. We do.

Q. 19. What may be the amount of loss sustained by non-payment?—A. I cannot say; the accounts are kept in the English Office—my business is to account for the money I receive.

Q. 20. Have you given any security?—A. I have given security to the amount of Twenty Thousand Rupees. I am the general Cash-keeper of the Police.

Q. 21. What salary do you get?—A. One hundred Rupees per month, sixty Rupees from the General Department, and forty Rupees from the Abkaree Department.

Q. 22. How many people are employed under you?—A. I have three Mohurers and one Podar in the License Department, and a similar establishment in the General Department; besides these I am obliged to employ some Sirkars of my own, not paid by the Police.

Q. 23. Do you know any thing how the collection is made?—A. I know nothing about the collection. Mr. Andrew always sends to the Shopkeepers.

17th September, 1836.

Ramjoy Mookerjee,
17th Sept. 1836.

Abkaree.

RAMJOY MOOKERJEE, *further examined.*

Q. 1. It appears by the copy of the quarterly account of the Abkaree Tax closed on the 1st May 1836, that the sum of Sicca Rupees 12,375-2, remitted to the General Treasury on the 18th of that month, is charged to the debit of that account. What explanation can you give about this irregularity? (account shewn)—*A.* I do not know any thing about the accounts, I give a statement of the receipts to the Clerk of the English Office daily, and he makes up the accounts.

Q. 2. But how comes it that the money which was not out of your hands until the 18th of the month of May, has been charged here (account shewn) at debit on the preceding month?—*A.* I cannot say any thing about how the debit you mention is in the account.

Q. 3. By whose order do you pay the money into the General Treasury?—*A.* By order of Mr. Blaquiere, he writes a letter to the Sub-Treasurer, and with that I send the money, and obtaining a receipt for the amount, shew it to Mr. Blaquiere.

Q. 4. Do you report the daily receipts to Mr. Blaquiere?—*A.* I, or one of my Mohurers report the daily receipts to the Clerk of the English Office. Besides, when the Tax-payers come to pay, they, in the first instance, as well as after payment of the amount to me, inform him of it. This is the book I keep (delivers a few loose sheets of paper, purporting to be the cash account for August 1836.)

Q. 5. Do you keep no other book but this? How could you ascertain from this book the exact cash balance in the chest? for instance, by the English account rendered, it would appear that, on the 30th April 1836, there should be a cash balance in the chest of Sicca Rupees 18,077-10-7. Produce your Bengalee Book, shewing such a balance?—*A.* The English Office Clerk strikes the balance of the Cash Book at the end of each month, and tells me the amount, which, corresponding with the memorandum I make upon a scrap of paper, my memorandum is thrown aside, and not taken care of.

Q. 6. This will never do. Suppose the English Office Clerk choose to tell you, that the balance was more than the actual amount of cash in the chest, how could you check it?—*A.* I compare it with the memorandum I have mentioned.

Q. 7. Produce your memorandum of cash balance for April 1836. You surely could not have destroyed it?—*A.* I will try to find it out.

Q. 8. The balance of cash on the 30th April 1836 being Sicca Rupees 18,077-10-7, how comes it that a particular sum of Sicca Rupees 12,375-2 was remitted

No. 15.
Ramjoy Mookerjee,
17th Sept. 1836,

Abkaree.

to the General Treasury on the 18th May, instead of a round sum of 17 or 18,000 Rupees?—*A.* I have disbursed 3,700 or 4,000 Rupees for repairs of the Distillery. I hold vouchers from Mr. Blaquiere for the sum, but it is not passed to account. A sum of about 1200 or 1400 Rupees is retained on hand to meet the claims for drawback on Gin and Brandy, and the balance remitted to the General Treasury.

Q. 9. To whom does the Kooliah Distillery belong?—*A.* To Mr. Blaquiere.

Q. 10. How comes the Government money to be paid for its repairs?—*A.* Perhaps it belongs to the Government, I do not know—I merely take care of the cash.

Q. 11. Do you know the number of Arrack and Rum Shops, or any other particulars about the Abkaree Tax?—*A.* No. I know nothing about it.

—
17th September, 1836.

Kumulakant Gangooly, further examined.

—
Kumulakant
Gangooly, 17th Sept.
1836.

Abkarree.

Q. Do you make up these accounts? (the Quarterly Abstract Cash Account for February, March and April 1836 shewn.)—A. Yes.

Q. Do you see that the sum of Sicca Rupees 12,375-2, part of collections for April, is remitted to the General Treasury on the 18th of May, and so in former months, the collections for February remitted on the 16th of March, and the collections for March remitted on the 19th of April, consequently there should be always a cash balance of from 17,000 to 20,000 Rupees on hand?—A. Yes, there is always the balance you mention on hand.

Q. Where is the money kept?—A. There is a Cash Chest in the Police Office under a guard; but whether the amount of balance is kept therein or not, I cannot say.

Q. Do you keep an English Cash Book?—A. I keep an English Cash Book and a Register Book of daily receipts.

Q. Produce these Books on next Wednesday with Mr. Blaquiere's permission?—A. I will do so.

Q. To whom do the buildings of the Kooliah Distillery belong?—A. There is no pukka building. The thatched houses belong to Mr. Blaquiere.

Q. To whom does the ground belong?—A. To the Zemindars.

Q. Who pays the rent?—A. The Arrack Distillers.

Q. The Distillery does not belong to Government?—A. No.

No. 17.

Jugomohun Bose,
17th September, 1896.

Abkaree.

No. 17. '—

17th September, 1896.

Jugomohun Bose, examined.

- Q. 1. Who are you?—*A.* I am the Kooliah Distillery Sircar.
- Q. 2. How long have you held the situation?—*A.* Permanently for five or six years.
- Q. 3. To whom does the Distillery belong?—*A.* To the Spirit Venders: we are employed to guard on the part of the Government.
- Q. 4. At whose expense were the Distillery houses built?—*A.* At the expense of the Spirit Venders. The fence round the Distillery and the Guard House, are built at the expense of Government.
- Q. 5. When was the Distillery last repaired?—*A.* It was repaired about two years ago: at present it is in a very decayed state.
- Q. 6. From what stuff is the Arrack distilled?—*A.* From Jagree, Rice and a kind of drug.
- Q. 7. Not from Taudy?—*A.* No.
- Q. 8. What quantity of Arrack is allowed to be taken away daily, by each Licensed Vender?—*A.* Twelve gallons.
- Q. 9. Do they make more than that quantity?—*A.* They generally make twelve gallons a day each, if any of them makes more one day, he makes so much less the next day.
- Q. 10. How do you ascertain that they do not make more than the quantity you have mentioned?—*A.* There are pots measured and sealed by the Police, each to contain six gallons, and no more, and no shop is allowed to distil more than two pots a day.
- Q. 11. What is your salary?—*A.* Eight Rupees per month.
- Q. 12. If the Venders distilled a larger quantity than they are permitted, can they carry it away?—*A.* No, there is a Jumadar and two peons stationed at the Distillery and I always attend there during the day time. They are not allowed to take away more than the quantity permitted.
- Q. 13. Have the distillers separate pots of their own to distil the Arrack in?—*A.* They have separate pots; but as soon as the Arrack is ready it is poured into the pots sent from the Police.

No 17.
Jugomohun Bose,
17th September, 1936.

Abkarce.

Q. 14. In what manner do the Venders take away the Arrack from the Distillery?—A. On the first day of every month, each of them presents to me a pass from the Police. When they take away the Arrack, I make an entry of it on that pass. The pass then accompanies the Arrack on its transit and is presented at the Boitakhana Thana, from whence only the Arrack is permitted to enter the City. The Sirkar stationed at the Boitakhana Thana takes the pass, and permits the transit of the Arrack into the City. He then forwards the pass to the Police Office, where it is daily countersigned by Mr. Andrew opposite my entry. (Two passes produced.)

Q. 15. It would appear by one of the passes you have delivered, that the Venders do not always carry away Arrack daily from the Distillery. If one does not take it away one day, is he permitted to take away double quantity the next day?—A. No. If he leaves it behind any day he cannot take away more than the usual quantity of twelve gallons the next, or any other day.

Q. 16. And does he pay the full Tax notwithstanding?—A. Yes; some of the Venders are making remonstrances about it; but I do not know whether they are to have any allowance.

Q. 17. Can you state the cause of short exportation of Arrack from the Distillery?—A. There are Arrack Shops opened in the Suburbs just on the border of the Town, which pay a Tax of only from two to three Rupees each per day, consequently can afford to sell cheaper; the consumption therefore in the Shops within the Town is less.

Q. 18. From what Distillery are the Shops you have just mentioned supplied?—A. From a Distillery near Allipore.

Q. 19. Are any of the Proprietors of the Shops in Town, also Proprietors of the Shops in the Suburbs?—A. No, they are different people.

Q. 20. Can the Town Shops be supplied from the Shops in the Suburbs, by passing the Arrack through any of the bye paths?—A. No; they cannot, there are Patroles going round, and the Shopkeepers in Town cannot bring in Arrack clandestinely.

Q. 21. Have any of the Shopkeepers in the Suburbs interest in the Town Shops?—A. No. One of the Soories who had a share in one of the Shops in the Suburbs, having quarrelled with his partner, has come to Town, and established a Shop by himself, since the beginning of this month.

Q. 22. Can you say what quantity of Spirit the Shopkeepers in the Suburbs are permitted to sell daily?—A. I cannot say.

No. 18.

Khajah Ahmed and
Hussenally,
17th September, 1836.

Abkaree.

No. 18.

—
The 17th September, 1836.

Khajah Ahmed and Hussenally, examined.

Q. 1. What are you?—*A.* We are Police Peons, stationed at the Kooliah Distillery.

Q. 2. How many men are stationed at the Kooliah Distillery on the part of the Police?—*A.* Two Peons and a Jumadar.

Q. 3. Are you permanently stationed at the Kooliah Distillery?—*A.* No; a change takes place every week. We are sometimes stationed at the Distillery, sometimes at the Rada Bazar Rum Shops, and sometimes at the Police Office.

Q. 4. Upon what duty are you stationed at the Distillery?—*A.* To prevent the Venders carrying away more than Twelve Gallons daily each, to prevent strangers coming into the Distillery, and to prevent fracas and disturbance therein.

Q. 5. Is any part of the Arrack made in the Kooliah Distillery, sold or drunk there?—*A.* No. It is prohibited, and the guard is stationed to see the rule strictly followed.

Q. 6. Have you ever been stationed at Sookchur?—*A.* No.

Q. 7. Is the Rum brought into the Venders' Shops under pass?—*A.* Yes; the Rum is brought into the Shops accompanied by a pass, and we are to see that none is brought in without being accompanied by a pass.

Q. 8. Whereabouts do you watch at Rada Bazar?—*A.* We go about patrolling on the Street—sometimes we enter the Shops.

Q. 9. Have you authority to search the persons coming into the Rum Shops?—*A.* We have; no person is allowed to take in Rum to the Shops, without producing a pass to us.

Q. 10. Is there a pass produced when Rum is carried out of the Shops?—*A.* When it is exported by Sea, or to up the Country, we require and examine the pass also.

Q. 11. How late are the Spirit Shops allowed to be kept open?—*A.* The Shops are allowed to be kept open till the evening gun, and we are to see that they are not kept open later. We also prevent fracas and disturbances in the Shops during the evening.

Q. 12. Do you allow any Arrack or Rum to be carried away from one Shop into another?—*A.* No.

• No. 19.

24th September, 1836.

Ramjoy Mookerjee, further examined.

No. 19.

*Ramjoy Mookerjee,
24th September 1836.*

Abkaree.

Q. 1. Have you brought the account you were required to produce?—*A.* No; I have not that account with me; I have not been able to find it.

No. 20.

24th September, 1836.

Nobinchunder Chatterjee, examined.

No. 20.

*Nobinchunder Chat-
terjee, 24th Sept. 1836.*

Abkaree.

Q. 1. What are you?—*A.* I am a Mohurur in the Abkaree Department.

Q. 2. How often is the Abkaree Tax paid by the Licensed Venders?—*A.* The money is generally paid daily, sometimes at intervals of two or three days.

Q. 3. Who grants the receipts?—*A.* Mr. Andrew.

Q. 4. In English?—*A.* Yes.

Q. 5. When the money is paid, where is it deposited?—*A.* The Cash-keeper puts it in the Cash Chest.

Q. 6. And how is it brought to account?—*A.* As soon as the amount is paid, I enter the same in a daily Cash Book, written in the Bengalee language, (like the one delivered by the Cash-keeper) I then go up to the English Office, and report the receipt of the sum, which is then entered in the English Cash Book.

Q. 7. Do you ever compare the Bengalee Cash Book, with the English Cash Book?—*A.* Yes, daily.

Q. 8. Are the Cash Receipts for the month, examined with the License Book?—*A.* Yes, I and the Writer, examine the same.

Q. 9. Is the Tax paid by instalments, or one payment?—*A.* By instalments; generally the whole demand is liquidated within the month. Sometimes a balance remains unadjusted, which is paid up at the beginning of the next month, but we notwithstanding, enter the whole amount in the month to which it belongs.

No. 20.

Nobinchunder Chatterjee, 24th Sept. 1836.

Abkaree.

Q. 10. Do you examine the Quarterly Statements, made up in the English Office, for transmission to the Accountant General's Office?—*A.* Yes.

Q. 11. Look at the account (the Quarterly Account for February, March and April 1836, shewn.) There is stated to be a balance of Cash on hand, on the 31st January 1836, of Sicca Rupees 5,235-14-0, was that amount in the Cash Chest on that day?—*A.* No; of this balance Sicca Rupees 1839-5-4 are expended for repairs, &c. of the Kooliah Factory, and 700 more in payment of house rent, on account Licensed European Distillery.

No. 21.

21th September, 1836.

No. 21.

Kumulakaunt Gangoly, 24th Sept. 1836.

Abkaree.

Kumulakaunt Gangoly, further examined.

Q. 1. Have you brought the English Cash Book?—*A.* Yes. (Produces the Monthly Cash Book, made up to the 30th April 1836, corresponding with the Statement delivered by Mr. Blaquiére.)

Q. 2. How do you make up this Book?—*A.* At the expiration of the month, the Cash-keeper translates his Bengallee Cash Book to me, and I write it up in English.

No. 22.

12th November, 1836.

No. 22.

William Coates Blaquiére, Esq. 12th Nov. 1836.

Abkaree.

William Coates Blaquiére, Esq., examined.

Q. 1. You have the entire charge of the Abkaree Department of the Town of Calcutta?—*A.* Yes, since 1808.

Q. 2. The principal item of the Abkaree Tax, appears to be derived from the Bengal Arrack Shops?—*A.* Yes.

Q. 3. In the Accounts of 1835-36, there appears some discrepancies. For instance, for the 53 Bengal Arrack Shops paying at the rate of 6 Sicca Rupees per day, you have credited Sicca Rupees 107,028-8, whereas, by calculation, the amount should be Rupees 1,16,070, for the year. There are deficits also in the credits for the Gunja and Taury Shops, Punch Houses and Wholesale Licenses, while, on the other hand, a sum of 695 Rupees is over credited on account Rum Shops. Will you

explain this?—*A.* The collection of the Tax is irregular. The whole amount of the monthly demand is not adjusted within the month, so that a balance generally remains outstanding for future recovery. Besides which, the whole number of Shops stated, have not been open for the whole year, but several for less than twelve months. The amount given is the correct amount realized within the year.

No. 22.
William Coates
Esquire, Esq.
12th Nov. 1839,
Abkarce.

Q. 4. Then your Accounts should shew, in different columns, the balance in arrear—the demand for the year—the amount realized during the year—charges on the collection—and the balance outstanding at the end of the year—your demands being upon few, such an account could easily be kept in your Department?—*A.* I have never kept my Accounts in that way before, but I will make up a Statement as suggested.

Q. 5. To whom does the Kooliah Distillery belong?—*A.* To a Native.

Q. 6. What is his name?—*A.* I do not know.

Q. 7. Who pays the rent?—*A.* The Soories (Arrack Distillers.)

Q. 8. To whom do the buildings belong?—*A.* To the Soories, but the fence or enclosure was erected, and is kept in repair at the Government expense.

Q. 9. The Distillers are permitted to take away from the Distillery twelve gallons of Arrack per day each, what are the checks against their carrying away a larger quantity?—*A.* They carry away the Arrack under passes from me. The Police has a general surveillance over them, and the Sirkar and Peons stationed at the Distillery, see that they do not distil more than twelve gallons a day each.

Q. 10. How many Sirkars and Peons are stationed at the Distillery?—*A.* One Sirkar and two Peons.

Q. 11. Any European Superintendent?—*A.* No, not a constant one. Mr. Andrew occasionally looks after them; but it rests with the Sirkar and Peons to check the Distilling, and exportation. The pass for the month is signed by me, in the beginning of the month, and it is countersigned daily by Mr. Andrew. On its being produced to the Sirkar at the Distillery, by the Shopkeeper, he allows him to take away two pots of six gallons each in a Banghy. The Banghy enters the Town by the Road of Boituckhana Thana, where another Sirkar is stationed, who, after examining the pass, allows the Arrack to be carried to the Shop. Patrolling Peons go about, and see that no irregularity is committed, and that the Arrack is not carried away from one Shop to another.

Q. 12. Is it absolutely necessary that in coming to Town, the Banghy must pass by the Boituckhana Thana. Can it not pass by circuitous bye-ways?—*A.* No. The Police Boundary Guard would prevent the transit to Town from any other bye-ways.

No. 22.

William Coates
Blacquire, Esq.
12th Nov. 1836.

Abkaree,

Q. 13. How many men are employed in the Boundary Guards?—A. About five hundred.

Q. 14. Is the retail sale of Bengal Arrack, limited to twelve gallons daily to each Shop?—A. No, they are allowed to sell more on payment of a proportionate additional Tax. If there was a larger daily consumption than twelve gallons, the Shopkeepers would apply for additional passes, and I would grant the same to them on payment of a proportionate excess Tax; but there is no vend for an additional quantity, the large importation of Brandy and other European Spirits of late years having injured the vend of Bengal Arrack.

Q. 15. What is the cause of falling off of the Abkaree Tax since 1828-29. In 1820-21 the amount was Rupees 2,40,962, in 1828-29, 2,42,555, and in 1835-36, Rupees 1,85,084?—A. The deficit is chiefly on the Bengal Arrack, the consumption of which is checked by the large importation of European Spirits, and the cheap rate at which they are sold, and the establishment of numerous Arrack Shops all round the boundary of the Town in the Suburbs, by the Collector, on lower terms than those under my control, and less restraint.

Q. 16. In your return you have stated the number of Punch Houses to be twelve. They used to pay a Tax of Five Sicra Rupees per day, it is stated to have been reduced to One Rupee since May 1835, what is the cause of the reduction?—A. The Chief Magistrate recommended the reduction in communication with the Board of Customs, Salt and Opium, which I disapproved of. The cause assigned was, that by reducing the Tax, men of respectability would come forward and establish Punch Houses of a better order, which was at variance with my opinion.

Q. 17. For the Tax levied, are the Punch Houses at liberty to sell any quantity of Spirits?—A. Yes; they are at liberty to consume in any quantity,—the Spirits which they consume, having already paid a duty of three annas per gallon, on importation by sea. This duty upon European Spirits imported by sea, was levied at my suggestion, as a Police retail duty, in September 1802, exclusive of the regular Custom House duty, and levied on the Wharf by me on importation, which improved the revenue considerably, in as much as the retailing Tax was collected upon the whole as imported, instead of being levied upon it as gradually sold by retail.

Q. 18. What are the Beer Shops?—A. They retail Spruce Beer and Country Beer, pay a Tax at the rate of five Rupees per month. There are eight Shops of this description licensed at present,—they cannot be considered permanent,—a Shop is opened one month, and shut again the next. Finding them receptacles of disorderly persons, I licenced them to keep them in order.

Q. 19. Have you any suggestions to make for the improvement of the Abkaree Tax?—A. No; none except it be the abolition of the Arrack Shops on the boundary in the Suburbs, or the placing them on exactly the same footing as those in the Town. On the contrary I contemplate a diminution, the venders being no longer

able to pay six Rupees per day, which falls very heavy upon the Arrack Shops, since the consumption of Bengal Arrack has decreased.

Q. 20. Do the Arrack and Rum Shopkeepers, give any security for the due payment of the Tax?—A. They used to give security before, which however I considered futile, as one Shopkeeper used to be the security for the other. They are however men of substance, and there is no fear of any loss by their non-payment.

Q. 21. What measures do you pursue in cases of non-payment?—A. I have always pursued lenient measures in the collection, and more particularly since the falling off of the Bengal Arrack Shops, by the introduction of European Spirits among the consumers.

Q. 22. What sort of people are the Keepers of Taury Shops?—A. They are not responsible persons. I make them pay the tax in advance. On granting the license I take in advance one month's tax, and continue to do so, as long as the shop is kept open.

Q. 23. What sort of people are the Keepers of Gunja Shops?—A. They are very responsible persons—there is no fear of losing any thing by them.

Q. 24. Have you any thing to do with Opium Shops?—A. We have no cognizance over Opium Shops. In fact there are no Opium Shops. The Druggists sell Opium, and the Police visitation is limited to those Shops only where disorders and riots are likely to happen. People never take Opium in the Druggists Shop.

Q. 25. In the Muffusul there is a regulation to punish persons selling smuggled Opium. Is there any regulation to this effect in Town?—A. No.

No. 22
William Charles
Baker, Esq.
12th November 1836.
Abkarce.

No. 22.

William Coates
Blaquiere, Esq.
26th December, 1836.

Abkaree.

No. 23.

26TH DECEMBER 1836.

WILLIAM COATES BLAQUIERE, Esq. *further examined.*

Q. 1. Ramjoy Mookerjee, the Cash-keeper of the Abkaree Department, has stated that the Kooleah Distillery belongs to you, and that a sum of about 3700 or 4000 Rs., from the Abkaree collections, has been laid out for its repairs, which is never passed to account. On questioning him how the Government money was laid out for the repairs of property belonging to you, he stated that perhaps the Distillery belongs to the Government, will you explain this?—A. As to Ramjoy Mookerjee's saying that the Distillery belongs to me, he no doubt alludes to me as Magistrate or Collector of the Abkaree Tax. I have no private property in that Distillery. The ground belongs to a Native named Radhakissen Set, the Houses to the Arrack Shop-keepers, whose Arrack is distilled there, who pay a ground rent to the said Set; the fence by which the whole is surrounded belongs to Government. The sum laid out for repairs, is for repairs of the said fence alone, which being erected at the Government expense, is the Government property, and consequently is kept up at the Government expense; but the amount is mis-stated, being only Sa. Rs. 1039-5-4. Ramjoy Mookerjee must have mentioned the sum at random without recollection. This charge for repairs is for the last 10 years, the bills have not yet been audited, as soon as they are, I shall charge the amount to the debit of the Government.

Q. 2. For what reason have these Bills remained unaudited for so long a period?—A. They have certainly been allowed to stand over long; but Government have only ordered the audit of accounts lately.

Q. 3. Then it would appear, that the Balances stated to be due to Government in the Statements furnished by you, are false balances?—A. Certainly not, as I am bound to account to Government for the Balance stated—which is correct. I now give in Monthly Statements, shewing the efficient, and inefficient balance.

Q. 4. Will you be so good as to send the Committee, copies of your Accounts since May last?—A. Yes, I will do so, after they have been sanctioned by Government.

Q. 5. You stated formerly, that only 12 Gallons of Arrack is allowed to be taken out daily from the Distillery, by each Licensed Vender, but if any of them choose to take out more, what check is there to prevent it?—A. As I have before observed, the Arrack is only allowed to quit the Distillery under my Pass. The Sirkar and Police people at the Distillery, see that the exportation is strictly confined to the quantity allowed by the Pass. The Pass is made out at the Police Office, and sent signed, by me, to the Distillery Sirkar, Juggomohun Bose, by one of the Licence Department Peons, and the Domestic of the Vender, upon application, is allowed to take away the quantity sanctioned, that is, two pots of 6 gallons each. Juggomohun signs his name upon the Pass, in authentication of the exportation.

(a Pass shown) inserting also, that twelve gallons of Arrack has passed out from the Distillery. A Banghy with the Arrack, accompanied by the Pass, proceeds to the Town, and on reaching the Boitukhana Thana, the pots are deposited, and the Pass produced to the Abkaree Sirkar stationed there (Takoordoss Chatterjee), who after seeing Juggomohun's signature on the Pass, and examining the seals on the pots, allows the Banghy to proceed on into the Town, putting his signature on the Pass.

Q. 6. Where is the Boitukhana Thana stationed?—A. On the Circular Road, at the end of the Loll Bazar Road, leading to Ballyaghat and the Kooleah Distillery.

Q. 7. Suppose the party choose to take the Arrack to a Shop in the Suburbs, what check is there against it?—A. It would be possible for him to do so; but the Banghees generally leave the Distillery in a body, accompanied by two Distillery Peons, who see them to the limit of the Boitukhana Thana.

Q. 8. Are similar checks used in respect to the passing of Rum to the Town?—A. No, not exactly similar. All Rum pays a *still head duty* of six Annas per gallon, previous to its removal from the Rum Distillery, which is at Sookchur, totally distinct from the Arrack Distillery, which is at Kooleah. The quantity permitted to be sold at each Shop monthly (viz. 380 gallons) is brought from the Sookchur Distillery, under a Pass, bearing my signature, to the Police Office, when, after being guaged, it is allowed to pass to the Shops. This Six Annas duty per gallon, is a still head duty levied by me as a Magistrate of the 24-Pergunnahs, under a Mofussil Government Regulation, and has no connection whatsoever with the duty paid for retailing Rum in the Town, which is 5 per diem, or 152-8 per month.

Q. 9. On what authority were the Taury and Ganjah Shops Licensed in 1803?—A. There was no legal authority to License these Shops, either under Act of Parliament or Government Regulation. The Licensing of them, was suggested by me in the year 1803, and sanctioned by Government, and they also come under the provisions of the 54th George the Third Cap. CV.

Q. 10. Why are not the retail European Spirit Shops taxed at the same rate as the Bengal Arrack Shops?—A. There are no Shops for the retail of European Spirits. The Shops selling European Spirits, seldom sell less than dozens.

Q. 11. The Punch Houses sell a less quantity. Was the tax on them reduced under the sanction of Government?—A. Yes.

Q. 12. What is the rate of tax levied on the Bengal Arrack Shops in the Suburbs?—A. They are taxed at the same rate as those in the Town, viz. Eight Annas per gallon, but are not limited to 12 gallons per diem, as the Shops in the Town, and are at liberty to take out Licenses for as much, or as little, as they may find convenient, and are not under the same checks and restrictions, as those in the Town, as to the hours of vending, &c. Two Shops at Manicktollah, pay only three Rupees per day each, and the daily quantity limited to six gallons, an indulgence which I have always refused, to obviate a falling off in the Revenue.

No 23.

William Cones
Blaquiere, Esq.
26th December, 1836.

Abkaree.

Q. 13. Can you furnish us with a statement of the number of Arrack Shops in the Suburbs, with the quantity consumed daily, and upon which the tax is levied ?—*A.* Yes, I will endeavour to do so.

Q. 14. It is stated in evidence, that the number of Taury Shops in the Town is 38, and that of Ganjah Shops 8; but by the statements furnished by you, the number of the former appears to be 62, and of the latter 9, how do you reconcile this ?—*A.* All the above mentioned Taury and Ganjah Shops were not open the whole of the year, but 62 of the former and 9 of the latter, were licensed at some one time or other during the year.

Q. 15. What objection have you to grant a License, during good behaviour, to every person, desirous of selling in any quantity, for which they can find a sale, and manufactured in any part of the Town or the Suburbs they please ?—*A.* None, provided the Arrack comes to the Town, having paid the present rate of duty; but permitting the sale of an unlimited quantity on payment of a certain fixed tax upon the Shop, would have this effect: A person who now keeps four Shops would then keep only one, where he would sell as much, as he now does in the four, or even more. The manufacture of Spirits is strictly prohibited in the Town.

Q. 16. Would not there be competition in that case ?—*A.* No, not much. There might be some—my opinion is decidedly against the change, as I attribute the great increase in the Abkaree Revenue under my controul, to the restriction to quantity per Shop, which was before unlimited, as now suggested. Gin and Brandy now pay nine annas per gallon on importation, to the Collector of Government Customs, and nothing to me, as heretofore, under the denomination of retail duty, which was three annas per gallon, and has been blended with the Custom House duty.

Q. 17. You stated formerly, that Bengal Arrack Shops are permitted to sell a further quantity, beyond the limited twelve gallons on payment of a proportionate excess of tax; in point of fact, how much has, at any time, been collected for extra quantities ?—*A.* I will furnish a statement thereof.

Q. 18. With reference to the Quarterly Cash Statements, furnished by you, it would appear, that the collection of the month is not remitted to the General Treasury, until about the middle of the following month, when by the collections of that month, the cash balance would further accumulate, consequently, there would always be a large cash balance in your hands, as you will see by this statement (shewn), this has been confirmed by the evidence of Kumlakantu Gangooly—is not this the case ?—*A.* It has been the case latterly, but the remittance to the Treasury is now made as formerly on the first of the ensuing month, or as soon after as possible. The cash is always kept in the hands of the Cash-keeper Ramjoy Mookerjee, and not in mine.

Q. 19. Considering the limited extent of accounts to be kept, might not the Establishment now employed be materially reduced ?—*A.* No, certainly not.

No. 24.

No. 24.

27th December, 1836.

D. McFarlan, Esq.
27th December, 1836.D. McFARLAN, Esqn. *further examined.*

Q. 1. Mr. Blaquiere has stated that the tax levied on Punch Houses, or Houses for the reception of European Sailors, which was formerly five Rupees per diem, is reduced to one Rupee, by your suggestion, since May 1835. What was the ground of your suggestion for the reduction?—*A.* I have proof enough that the people who kept Punch Houses in the Town, were exceedingly low and disrespectable, a principal cause of it was, as I, and some other Magistrates fancied, to be found in the very heavy tax of five Rupees per day imposed upon them. It appeared that they could never raise themselves under such a heavy impost, to pecuniary independence suited to their state in life, the reduction of the duty would lead, as I hoped, to make it worth the while of tolerably respectable men keeping Houses all the year round. Another bad effect of the heavy charge was, that Houses were shut up altogether and Seamen were driven to other means of housing themselves, these means may be guessed at, they were far more inconvenient for the efficiency of the Police. I add the correspondence that passed with Government on the subject.—(letter from the Chief Magistrate to Mr. Macsween, dated 5th June 1834—letter from Mr. Mangles to the Chief Magistrate, of 28th March 1835—Ditto from the Chief Magistrate to C. Macsween, of 5th January 1835.)

Q. 2. What are the duties of the two Constables in the Conservancy Department?—*A.* The primary business of one (Statham) is to attend at, and to certify the daily muster of Coolies and Hackeries, besides which he has charge of the Plain and its Roads. The other (Clarke) is the Overseer of the whole of the Strand-bank, from Cooly Bazar to Hautkhola. He has also the Conservancy charges of Clive Street, Durmahatta, and the Streets westward of them.

Q. 3. The Establishment of the Public Tanks, Sicca Rupees two hundred and thirty-eight, five annas per month, in the item No. 20 of the Abstract Disbursements appears large, will you give the particulars thereof, and state if it can be reduced?—*A.* I add a list of the Tank Establishment, the sum formerly paid on this account was much larger—when I took charge. I reduced it very much, and do not think further reduction can be made.

Q. 4. What are the duties of the people employed?—*A.* To prevent persons defiling the water of the Tanks by bathing swimming dogs in them; a few Mollys are also employed to look after the flowers. I tried to realize the amount of cost out of the fisheries. The lessees however failed—a small sum is only realized from the grass rent, and from persons angling for pleasure.

No. 24.

D. McFarlan, Esq.
27th December, 1836.

Q. 5. How many Public Tanks are there?—A. I believe twenty-two.

Q. 6. Is not the Establishment for the Fire Engine Department (No. 25) large? there are two Constables, how are they employed?—A. The Establishment in my opinion is not large, the Constables remain with the Engines, are bound to see them kept in thorough repair, the hoses, &c. bound. On every occasion of a fire they must start at whatever time it happens, the exposure and wear and tear of life are great. There had been five Constables who have died since 1828. I have sometimes wished to make the men generally useful as Constables in the rains, and they would be so on emergencies.

Q. 7. How far is the Fire Engine Establishment, effective in extinguishing fires?—A. Fires very seldom break out amongst Pucka buildings. Huts being generally thatched, when a fire breaks out amongst them, the Engine is not always very effective, as the fire consumes the straw-built huts, in a very short space of time, and the Engines in many instances arrive too late to save them. There is an account of the number of Fires where the Engines have attended, which will be sent for the Committee's inspection.

Q. 8. Are the Engines stationed at the same stations as was reported by the Police Committee of 1822?—A. Yes.

Q. 9. Do you think a Bye-Law, compelling the people to roof their Huts with Tiles, instead of Straw, would have the effect of doing away with the necessity of the Fire Engine Establishment?—A. I have had applications made to me by Merchants for orders to compel people to tile their Huts. I have some doubts about the policy of any such law. I think one tendency of it would probably be, to drive the poorer population out of Calcutta, most of the people living in Huts, are not able to erect or hire tiled ones, and you might in that case have to increase the wages of Servants, a Bye-Law to the above effect, seems to have once existed, and to have been repealed in 1781. Indeed Tiled Huts having mat walls, would only be a little better than straw ones.

Q. 10. Do you think any reduction could be made in the Fire Engine Establishment?—A. No. The main strength is reduced in the rains.

Q. 11. Who superintends the Department?—A. Captain Birch; the whole Police Establishment, European and Native, is available in cases of emergency and difficulty.

Q. 12. If the Magistrates were charged with the Judicial Conservancy business, would their labour be increased much?—A. No, the number of cases in the Conservancy Department is small, and their importance light,—I subjoin a part of my Annual Report of 1832.

Q. 13. The charge for repairing the Roads for 1835-36 (No. 10) is stated to be Sicca Rupees 49,615-4-10, being Sicca Rupees 28,658-11-8 for materials, Sicca

Rupees 17,950-11-8 for labour, and Sicca Rupees 3005-13-6 for rollers,—can you give us the particulars?—*A.* Yes, I add a Statement. The first item is for Khoa. Its price became gradually so much reduced by the effect of competition for Contracts, that it was no longer possible to obtain Khoa of a first rate quality. On an enquiry held by me, it was found that the Contractors were in the habit of making up, by short delivery, the sum that it was clear they must lose by the rate, the stuff was inferior, but bad as it was, it could not be supplied at the low rate. I saw no effectual remedy, but demanding from the Contractor, a deposit of Government Paper as Security for the due fulfilment of his contract, and directing the special attention of the Superintendent, to see that the check on delivery was more effective, and the quality improved. The price has risen considerably—from 9 to 13 Rupees per hundred Farrahs. The present Contractor says that the price is still too low. He was once unable to supply material according to his contract, and I attached a portion of his Deposit. He is, I understand, engaged to supply bricks to the principal builders, and from the use he is able to turn the Vitrified Bricks to, he will probably be able to supply at the contract price; the deficiencies in the Contractors delivery of Khoa have not been so seriously felt, in consequence of the considerable use that has been made of Ballast stone, by which a very excellent kind of Road is made for those parts of the Town, which are liable to great thoroughfare. Ballast stone expense is incurred for landing, breaking and carriage. I think we pay fourteen Rupees per one hundred Farrahs. The plan is not yet so perfectly matured. I think the expenses of repairing the Roads will be much lessened. The charges for the stone material, is not half more than Khoa, and I calculate that it will last at least three times as long. The second item is for the conveyance of the materials; this is also done by contract. The bills of the Contractors of Khoa, and those of the Contracts for carriage, in some measure check one another. The Rollers are useful, but very expensive; we have our own Rollers, and the charge is for feeding Horses, wages of Kalashees, purchase of Horses and Rollers, and sundry petty repairs to the Rollers.

Q. 14. What other checks are there for the accurate delivery of the Khoa by the Contractor?—*A.* With every bill for Khoa, the Contractor furnishes a receipt by the Superintendent for the quantity of Khoa charged for. This receipt is made up from the returns of the daily deliveries of Khoa at all the Depots. These are furnished by Peons, paid by Government, over whom is placed a Native, at Rupees 42 per month. The wages are however low, and it is very possible that they may write down, as received, a little more than is actually given. If however the Superintendent looks well after the work, the amount overcharged, can never be considerable. The saving that would arise from checking, such suspected malversation as I have above described, would not be sufficient to pay the large salaries that a better class of Inspectors would require. The number of Depots for delivery of Khoa, is as below, viz. under the Superintendent of Roads seven, and under the Executive Officer five. The Establishment maintained for the former is 10 Peons at 5 Rupees per month, and 1 Supervisor at 42 per month, and for the latter 6 Peons at 5 Rupees per month, and 8 Mate Coolies and 1 Bricklayer, for 41-4-4 per month, in lieu of them, Mr. Sevestre employs 5 Sircars for measuring and receiving Khoa from all Depots.

No. 24.

D. McFarlan, Esq.
27th December, 1836.

Q. 15. The charge for cleansing the Town, for the year 1835-36 is stated to be (No. 11) Sicca Rupees 66,313-4-10. Feeding of Bullocks, &c. Sicca Rupees 3467-15-10. Ghowkhana Establishment Sicca Rupees 904. Bullocks purchased 166-15-9. New Carts 2,197-13, and Repairing 841-10-9. Total Sicca Rupees 73,891-12-2, will you give the particulars thereof?—A. I add a Statement of particulars.

Q. 16. Under whose charge are the Carts and Ghowkhana Establishment placed?—A. Of Overseers McCulloch and Green.

Q. 17. Whose property are the Carts and Bullocks?—A. A part is the Government property, and a part is hired; the hired Hackeries did not answer the purpose, and I got Carts built; cost of a Cart is about 95 Rupees. I have lately introduced small Carts drawn by one Bullock, which are very convenient. The Horses are employed in drawing the Water Carts, and are used in the cleansing Carts, during the rainy season, but this causes no great additional expense. The greatest expense for the purchase of a Horse, is about twenty-five Rupees—what answer our purpose, are strong bony Horses that walk well; that they cannot trot or canter is of no consequence.

Q. 18. Cannot the cleansing of the Town be effected by Contract?—A. I have often thought of trying the plan, but have been deterred by a strong apprehension, that it would fail, and an unwillingness to incur the sole responsibility, which would be serious. Any considerable increase in the filth and nastiness of the Town, especially if accompanied by epidemic sickness, would give rise to well-founded complaints. My apprehensions of failure, arise from the fact, that such contracts are not natural in this country. The Natives who would undertake it, could not be trusted, and there are no respectable Europeans qualified for it, by the possession of money and character. If a Committee of Inhabitants, such as I have recommended, chose to try it in their own Division, it might be done. It appears to me that there would always be difficulty in defining a breach or failure of contract.

Q. 19. Why are the expenses of repairing the Esplanade Road (No. 43) not charged to the Assessment Fund?—A. Because the Town has no property in the plain; it is not assessed; some of the inhabitants are fond of driving on the course; Government might very well say that those who drove should pay a toll, but they could not levy an additional assessment on the poor Natives of the Northern Division for the purpose of contributing to the pleasure of the rich, who chose to drive on the Course or the Strand.

Q. 20. The expenses of Lighting the Town of 1835-36 (No. 45) are Sicca Rupees 6253-8-1, will you state the number of lights and the names of the places lighted?—A. This expense is reduced from 9000 to 6000 Rupees. I add a recent correspondence with Government on the subject.

Q. 21. The whole of the Town is not lighted?—A. No. In the present state of the Town it is out of the question to expect the poorer parts to be lighted; part of

Chowringhee is like a cluster of country villas, part like a village inhabited by the poor, while the back of the northern part is occupied by gardens. Two-thirds of the Town cannot be treated in the same way that it would be desirable to treat the space most densely inhabited. An European system of taxation providing for good drainage, good lighting and watering, might be applied to the square bounded on the south by Esplanade Row and Dhurumtollah, on the east by the Central Road, on the north by Mutchwa Bazar Road, and on the west by the River.

No. 24.
D. McFarlan, Esq.
27th December, 1836.

Q. 22. The expenses of Watering for 1835-36 (No. 44) are Sicca Rupees 24,715, being fixed Establishment Sicca Rupees 21,872, Repairing Aqueducts 571-2-1, new Tunnel 2,272-12-2, will you mention the places watered for this expense?—A. Of the total 21,872 Sicca Rupees 4,320 is for working the Steam Engine at Chandpaul Ghaut by contract, and Sicca Rupees 17,552 the amount allowed by Government for watering Roads. Of this latter amount considerable savings have accumulated, and out of this accumulated fund several works of public utility have been paid for, viz. an additional Reservoir, an additional pair of Pumps for the Steam Engine, an extension of the Aqueducts down Park Street as far as Free School Street, Chitpore Road as far as the Foujdaree Balakanna, and the Loll Bazar and Bow-Bazar Roads—what is watered out of this fund, is the Roads on the Plain and in front of all Government Property.

Q. 23. The Chitpore Road is not watered out of this charge?—A. No. The Chitpore Road is watered from the interest of a subscription raised by Mr. Trower, chiefly in 1829, which amounted to Sicca Rupees 31,850; a small Tank was dug out of that fund which cost Sicca Rupees 11,850, and the balance is invested in Government Securities, yielding annual interest of about Sicca Rupees 1000—the expense of watering is Sicca Rupees per year.

(N. B. Expenses of Watering the Chitpore Road for five seasons, viz. from October 1831 to June 1836, amount to Sicca Rupees 4,911-4; a fair average cannot be obtained as the quantity of Road watered was gradually extended.)

Q. 24. Have you made any calculation what it would cost to water the whole Town?—A. The same remark applies to this question as I made on the subject of lighting, and it is in vain to calculate the expense of watering all the lanes in the Town, for we cannot expect the inhabitants of these lanes would consent to defray the charge. The expense of watering Chitpore Road is 1,440, taking that as a mean breadth, then the expense of watering the Roads, as per margin,* would be Rupees 80,000. This is necessarily a vague guess: it is however founded on low data, and would consume 2 percent. of the Town Assessment.

* Statement not given.

No 25.

D. McFarlan, Esq.
23th December, 1836.

No. 25.

December 28, 1836.

DAVID MCFARLAN, Esq. *further examined.*

Q. 1. The Magistrates' and Superintendent's Salaries amount to Co.'s Rupees 8,262 per mensem, do you consider that expense necessary?—*A.* No; I have recorded my opinion very extensively in that respect some time ago, a copy of my opinion is annexed.

Q. 2. Has the system of the division of the Judicial duties of the Town under separate Magistrates, while the Executive duties are performed by the Superintendent, worked well?—*A.* Very well. The Superintendent of the Police, upon its present footing, is a very necessary Office.

Q. 3. Don't you think that the duties of a Magistrate may be performed also by the Superintendent without inconvenience,—formerly the Magistrate in the Report Department used to perform the Executive duties?—*A.* It is very important to separate the Executive from the Judicial functions, and I am of opinion that the Office of the Superintendent should continue separate.

Q. 4. There are five Magistrates, do they all attend the Police daily?—*A.* Yes.

Q. 5. At what hours do they attend?—*A.* I have no record of the precise time of their coming to and leaving Office—in general they come at eleven and go about three or four—my power is no wise greater than or different from the Division Magistrates—Government have directed me to perform certain other duties, and any attempt on my part to obtain more extensive powers of regulating attendance or dictating duty would do more harm than good. When prevented by sickness or other urgent cause from attending, the Magistrates always obtain the assistance of some other Magistrate.

Q. 6. Could you conduct the whole business of the Police with a less number of Magistrates with the same efficiency as at present?—*A.* Yes; myself and two other Magistrates could do all the work.

Q. 7. And with your other duties as Member of the Military Board?—*A.* No; in that case I should propose to take up all important cases, and to be always ready at the Police Office.

Q. 8. Does not Mr. Blaquiére, besides being a Magistrate, hold the situations of Interpreter of the Supreme Court and Collector and Superintendent of the Abkaree Tax?—*A.* Yes.

Q. 9. Mr. Robison and Mr. McMahon have no other avocations?—*A.* Mr. Robison I believe has no other duty. Mr. McMahon is Controller or Examiner of Lottery Drawings, but that does not occupy much time.

Q. 10. Does not Mr. O'Hallon, besides being a Magistrate, hold an important situation in the Insolvent Court?—Yes; only I cannot say whether the situation is important or not.

No. 36.
D. McFarlan, Esq.,
20th December, 1836.

Q. 11. What do you think would be the proper Salary for two efficient Magistrates to enable them to devote the whole of their time to the Police, and do you think an efficient Chief Magistrate may be chosen from the Service at a less Salary than what you would expect, on giving up your seat in the Military Board? —A. I think Rupees One Thousand and Four Hundred, and One Thousand would be proper Salaries for the two Magistrates, and you might get a very proper person to act as Chief Magistrate for a Salary of Rupees Two Thousand per month. If you select him from the Service you would probably have to give more. The Office should not be filled by a young or inexperienced person.

Q. 12. Does Captain Birch devote the whole of his time in conducting the duties of the Superintendent of the Police?—A. Yes; including under that term the business of collecting the Assessment. He assists also in checking Salt smuggling for which he receives an allowance.

Q. 13. A sum of Sicca Rupees 7,392 is charged in the Accounts of 1835-36, as Law Charges (No. 33,) what does it consist of?—A. Of the Clerk of the Crown and Crier of the Supreme Court's Fees for the business done in the Criminal Sessions.

Q. 14. In the General Department are employed (No. 16.)

One Accountant, at Company's Rupees...	418	0	0	per month.
One Keeper of Deposits, &c.....	292	9	8	„
One Chinese Interpreter,.....	52	4	0	„
One Bengallee and one Persian Writer, } at 15-10-9 each	31	5	6	„
Nine Menials,.....	40	2	9	„
Five Peons,.....	25	11	9	„
Eleven Men and two Boats' hire for sinking } dead bodies,.....	52	4	0	„
<hr/>				
Co.'s Rs. 912 5 8				

Are all these necessary and reasonable expenses?—A. They are. Mr. Watts who gets Co.'s Rs. 418 is a very useful and efficient man—Mr. Habberley who gets Co.'s Rs. 292-9-8 is my Clerk in the Judicial Department; he has a great deal to do. His work might be done for a less charge, but it would be hard to deprive him of his allowance after a service of 35 years. The Bengallee and Persian Writers are necessary, as I have to carry on a great deal of correspondence with the Muffusul in those languages. The Menial Servants and Peons, as well as the Establishment of Boats for sinking dead bodies, are necessary. The Chinese Interpreter might perhaps be dispensed with by hiring a man occasionally when required; but the allowance was fixed very many years ago, and such is the rancour of Chinese hostility that there is use or advantage in having some one dependent on ourselves alone to interpret.

No. 25.

D. McFarlan, Esq.
28th December, 1836.

Q. 15. Could any reduction be made in the Establishment of the House of Correction (No. 19) amounting to Co.'s Rupees 299-8 per mensem?—A. No; in addition to the Salary of the Keeper I give him thirty-five per cent. of the produce of the Convicts' labor.

Q. 16. What is the average monthly expense of keeping a Convict in the House of Correction?—A. About two rupees four annas each upon an average, including Europeans, whose keep costs four annas a day.

Q. 17. There are ninety-six persons employed in the Town Guard, exclusive of five Sergeants (No. 22), are they necessary?—A. Yes; they are employed for the general purposes of the Police.

Q. 18. The Establishment of the Magistrates' Office, the First Division, amounts per month, Co.'s Rs. 398 15 2

2d Ditto,	„	358	12	10
3d Ditto,	„	404	6	4
4th Ditto,	„	487	2	6
		1,649	4	10

Can any part of these be reduced without inconvenience?—A. Yes; materially. The First Division would be efficient with one Interpreter, who is also to act as

Clerk, Salary per mensem,	„	150	0	0
One Writer,	„	40	0	0
One Duftory,	„	8	0	0
One Brahamen,	„	7	0	0
One Mollah,	„	7	0	0
Two Peons,	„	10	0	0
		222	0	0
The Second the same,	„	222	0	0
The Third the same,	„	222	0	0
The Fourth the same,	„	222	0	0
		888	0	0

Q. 19. Why did you not propose the reduction to Government?—A. It is always painful to deprive old Servants of their situations; any such reduction would have been exceedingly unpalatable to the Division Magistrates and would have tended to obstruct the easy working of the system established in 1830. In my Annual Report of 1833, I proposed reduction in the Office of Conservancy Sirkars, that was referred by Government to the consideration of the Division Magistrates, and the question has not to this day been disposed of; under the then circumstances it seemed to me very needless to stir unpleasant discussions from which I had no reason to expect any beneficial results.

Q. 20. What is your opinion in respect to the whole of the Native force under the Police, they appear to be large?

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D. McFarlan, Esq.
28th December, 1836.

Thanadaree Establishment,.....	1398	Men
Siddiwallee or Boundary Guard,.....	274	„
Girdwaree,.....	60	„
Opurgustee,.....	23	„
River Chowkey,.....	103	„
Town Guard,.....	96	„
Female Kattarah,.....	6	„
	<hr/>	
	1960	

A. I think it is very desirable to have an efficient force distributed in the Town, and am of opinion that there should not be any reduction in the present strength of the Police: the strength of the boundary guards is now less necessary since the Town duties are abolished—but they do occasionally stop stolen goods passing out of the Town—on the River face they are absolutely necessary. A more explanatory statement of the Native Police Force and its duties would stand thus :

Thanah Establishment {	Night Watch,.....	723
	Day ditto,.....	444

Chowkeydars 1167

Thulpuhroos:--these are Stationary Guards at Thanahs } ready to receive all reports,.....		74
	Boundary Guard, including Boat Chaprashees,	354
Town Guard Pykes and Opurgushtees,.....		192
		<hr/>
		1787

Taking the houses in the Town at 50,000 the above gives as a night watch about 43 houses to each man.* It is not desired that I should enter upon the question of Police duty. I may mention that the existence of a strong body of Police, available for all duty, is not only necessary in a place like Calcutta; but that they are in fact very severely worked.

* On this subject, see a report of a Committee of Magistrates, dated 3d Nov. 1821.

Q. 21. With reference to question (No. 15) of yesterday, will you state under what checks the contractors and others, bills for cleansing the Town are paid?—**A.** The contractors' bills for hackeries, coolies, &c. are checked by the returns of the inspecting overseer (Statham) who attends at the muster of the coolies and hackeries every morning, and by the monthly returns of the Overseers of Divisions. Mr. Statham's returns and those of the Overseers are, in the first instance, compared, and the contractors' bills then examined by those returns. The rates at which the hackeries, bullocks and coolies are supplied are fixed by me. The hours of work are from six in the morning until two in the afternoon. All absentees are deducted from the totals mustered. The Feeding bills are checked by the number of bullocks. Two seers of gram and seven seers of straw being allowed to each. The Overseer in charge of the Gowkhana certifying that the

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price is the average Bazar price. For horses the Overseers are allowed Ten Rupees a month to cover all expenses of feeding. All the bills for cleansing the Town are examined by Lieutenant Abercrombie and are countersigned by him previously to being passed for payment.

No. 25 A.

No. 25 A.

STATEMENTS OF THE PRINCIPAL OFFICERS OF THE POLICE BEFORE TWO MEMBERS
OF THE COMMITTEE.

Woomachurn Doss.

Woomachurn Doss, writer, employed in copying the correspondence of the Chief Magistrate with Government, has been engaged for twenty-six years, (gives in a statement of the particulars of his duties.)

Cossinauth Doss.

Cossinauth Doss, writer, has served for thirty-two years, keeps the accounts of the Police Office, under Mr. Watts, writes the cash book, and makes abstracts, and enters into regular books.

Surroopchunder Doss.

Surroopchunder Doss has served twelve years, assists Cossinauth Doss, prepares fair copies of accounts furnished to Government of disbursements in the judicial and assessment departments, docket cash vouchers, enters lists of establishment paid monthly, and does miscellaneous business as required by Mr. Watts.

Punchanund Bannerjee.

Punchanund Bannerjee has been employed since 1830, keeps Pay books of conservancy peons and sircars and other servants, copies Sitting Justices' contingent bills and keeps accounts of the stationery, checked by Mr. Watts, also accounts of the Conjee House.

Duftery rules the Books of the assessment, judicial and conservancy departments, and makes pens.

Peon carries letters under Mr. Watts' order.

Muddunmohun Chatterjee.

Muddunmohun Chatterjee, sick, acting for him—*Unoopchunder Mojoondar*, writes the Bengalee cash accounts of the several departments, docket in Bengalee the bills passed for payment after examination.

Goluckchunder Mookerjee not forthcoming, explanation required.

Hurromohun Sircar.

Hurromohun Sircar keeps Accounts of the pay of the Thana Establishment and writes the receipts of the people, each person giving a separate receipt. Mr. Peterson superintends the payment since 1828. There is a man named Nubkissen, whose business is to make payments and receive cash from the Treasury—gets Rupees six a month.

Rychurn Seal, Poddar, examines the money received from the Treasury, has a man under him, paid by Ramjoy Mookerjee rupees eight. He gets rupees ten. Hurrymohun makes the payments.—*Rychurn*, also examines the money received in the Office—he has served nine years.

Rychurn Seal.

Mr. H. C. Watts is accountant, has the examination of all bills, and sees that there is authority or vouchers for all that is passed, as well as that the charges are calculated correctly. Sees to the keeping of the accounts. The daily cash is posted by the subordinate establishment under Mr. Watts' instruction. The correspondence of the Chief Magistrate is under Mr. Watts' charge. Weekly dieting bills of the Police Hospital checked by the returns of the surgeon, ditto dieting prisoners in the House of Correction, calculation of dieting Town Guard prisoners checked by Mr. Watts. The returns of prisoners are not made to Mr. Watts. Preparation of Annual and Quarterly statements. Sees to the payments of all the establishments, which are not charged to the assessment funds. Checks generally the Treasurer's accounts.—*Mr. Watts'* salary is paid from the general fund. On an equal distribution the assessment ought to pay half. Mr. Watts' office existed before the assessment tax was established. The establishment under Mr. Watts is charged to the assessment fund. *Woomachurn Doss*, 62-11-3, and *Ramchand*, 25-1-3, ought to be charged exclusively to the judicial. *Cossynauth*, 62-11-3, and *Surroopchunder*, 25-1-3, half and half, so also *Dufturee* and *Peon*. No security is taken from the Cash-keeper, who is also Cash-keeper in the Abkaree department. The balance of 1st May 1831 being assumed to be correct, the present balance that ought to be in his hands can always be shewn; but as the cash is blended with that of the Abkaree of which the balance is unknown to Mr. Watts, it is impossible to ascertain whether it be forthcoming. The person who was the Treasurer's security is dead. He is a very old man, and has generally a balance of Rupees 30,000 on hand. The balance consists of an old balance in the assessment department, originally of Rupees 6,000, now accumulated to Rupees 8,000. Cash balance of the town duty fund amounting to Rupees 11,000, and about the same amount in the account of the Sitting Justices' department. This last arising from saving in the watering fund and contingent charges. There is at present no check to show that the sums brought to account of fines imposed by the Magistrates of divisions are correctly stated. Mr. Watts suggests that their clerks should prepare a statement from the books of proceedings and send it to him weekly or monthly. Part of the balance in the Cash-keeper's hands consists of the arrears of salaries not drawn by the parties. This amounts to about Rupees 5,519-10-9. In service eight years.

Mr. H. C. Watts.

Shaikh Haroo, in service eleven years. Salary Fifty Sicca Rupees per month. Interprets Chinese language to all the Magistrates when required,—not employed daily, but attends daily at the Police Office.

Shaikh Haroo.

Syed Noorally employed since 1833. Salary Sicca Rupees Fifteen; writes Persian Roobakarees in Mr. Robison's, Mr. O'Hanlon's and Mr. McMahon's Offices for transmission to the Muffusul Police, and explains Persian Roobakarees received from the Muffusul Police to the three Magistrates above-named. Is employed by the Superintendent and some of the Magistrates to examine servants of European

Syed Noorally.

and Native Gentlemen, when any theft is committed at their houses, by means of Rice ordeal. The process is this. One sicca weight of rice is weighed for each servant to be chewed a week before the process: he goes to the house, and taking down the names of the servants, apprize them that in a week they will be required to undergo the ordeal of rice, if the stolen property is not found within that time. In some instances the stolen goods are recovered by these means—the servants being apprehensive of not being able to get off clear by the ordeal, throw the property in some part of the house. If the property is not found by the end of the week, the ordeal comes on, and the person, from whose mouth the rice comes out in dry dust, is suspected, his house is searched, and sometimes the stolen property is found therein, and sometimes the thief, after the process, acknowledges his guilt and restores the property. Is not employed every day.

Gooroodoss Mookerjee.

Gooroodoss Mookerjee is Molurur and assistant to the Cash-keeper, who is his father. Salary Sicca Rupees Twenty-five. Has been about eight years in the service. Has not given Security. The Cash for payments passes through his hands. He keeps all the vouchers till the accounts are translated into English, when the vouchers are delivered to Mr. Watts, who returns the account counter-signed as compared with the vouchers. Suspense account vouchers remain with him till final adjustment. He superintends the Bengalee Rokur which is written fair by Onoophunder. Cannot say what is the balance in the cash chest on any particular day—that, his father only can speak to, he is now sick, may be able to attend on Monday or Tuesday.

Mr. Joseph Samuel.

Mr. Joseph Samuel is Clerk and Interpreter in the Conservancy department, attends the Magistrates sitting in conservancy cases. Salary Rupees two hundred and fifty. Has been about thirty-two years employed in the Police as head clerk—has charge of the correspondence and records. The weekly returns of the collections, and the annual, half-yearly and quarterly statements made to Government pass through his office—the latter are drawn up in his office. A Brahmin and a Mollah are employed with the Chief Magistrate, and the Magistrate trying conservancy and assessment cases. Mr. Samuel takes depositions when directed by any of the Magistrates.

Gooroopersaud Bose.

Gooroopersaud Bose being sick, his son, *Doorgapersaud Bose* is acting for him. Gooroopersaud has been twenty-two years in the employment of the Police,—is now under Lieutenant Abercrombie. Copies the reports from the Thanas or Sircars regarding the state of roads, drains or nuisances, and sends the book containing them to the Executive Officer for orders. There are three or four reports daily on an average. Reports of repairs required as sent in weekly by the Overseers are likewise entered by him into a book for the order of the Chief Magistrate. Two or three such reports are sent in monthly.

Nilmoney Sein.

Nilmoney Sein assists Gooroopersaud and writes the monthly abstract of people and establishment employed under the Overseers and makes out the bills and accounts of watering the roads. Checks contingent charges by the Overseers' reports, and enters the bills into a book. Checks Gowkhana bills by reports of Overseers and Muster master. Formerly the Conjee House report

books came under his charge, but from press of business that duty has been transferred to Pauchoo Bonerjee in the assessment department. Keeps daily report of steam engine expense. Also checks lighting contractor's bills by reports from the Thanas and Sircars—salary Sicca Rupees Twenty—has been twelve years employed.

Mr. H. G. Statham is Inspector of Muster of conservancy supplies, people, carts, &c. and prepares a daily return accordingly. During the day employs his peon Ram Seal to see that the people are at their posts and report accordingly. Serves the summonses on Europeans in the conservancy department and executes all warrants. Is entitled to warrant fees, but these are generally remitted. Does not realise Rupees Twenty-five per annum by fees. Salary is Sicca Rupees One Hundred. Superintends repairs of Kacha and Packa roads on the Plain and Cooly Bazar. All the drains and tanks of the Esplanade are under his care; also the children's walks. Superintends the day and night patrol of the Esplanade and receives their report at Monohur Doss' Tank Guard House. Prepares a daily return of his expenditure on the roads and drains of the Esplanade, and quantity of Khowah used. Mr. Abercrombie has one person and Mr. Statham another to look after the delivery of Khowah. Besides which Mr. Statham measures the quantity of work done, and can thus check the reports of deliveries. Has been employed for eight years in the Police, was formerly a ship's steward. Ten Coolies are employed on the children's walks in keeping them in repair. Mr. H. G. Statham.

Madhubchunder Seit, Writer in the conservancy department. Salary Sicca Rupees Sixty. Has served about fourteen years; takes down the reports in the judicial department of the conservancy, not in the executive department. On the report book the Magistrate enters his directions as to summons or otherwise. When a summons is ordered, the complaint is entered into the case book, in which the Magistrate enters his own proceedings. Draws out notices and summonses and writes Mochulkas or recognizances on account of nuisances. Abstracts reports of cases disposed of in the conservancy department; receives fines levied by the conservancy Sircars and pays them to the Khazanchee; makes out statements of fines from the book of proceedings and calls on the Sircars for realisation. There is no check on him. The Cash-keeper does not know what amount the Sircars pay, but merely receives what cash is paid to him. Fills up warrants and subpœnas in the conservancy department; attends the Magistrate in bringing up cases for trial. Mr. Samuel attends Mr. O'Hanlon, and Maudhubchunder attends Radhacanth Deb; gets a receipt from the Cash-keeper. The receipts are compared with the Cash-keeper's books by Mr. Watts and returned to Mr. Samuel. There is a register of fines. Mr. Samuel takes in a book of his own, note of the fines imposed by the Magistrate on any day, to which the Magistrate affixes his signature, by which he checks Madhubchunder's statement. Mr. Watts is enabled to check the Treasurer's books by comparing them with Mr. Samuel's report book—Vide Mr. Watts' evidence. Madhubchunder Seit.

Isserchunder Singhee, Salary Sicca Rupees Twelve. Has served eleven or twelve years; copies the report into the book of proceedings; fills up building Isserchunder Singhee.

licenses ; copies reports referred to Overseers or Superintendent of roads. Copies miscellaneous letters.

Mr. John Siret.

Mr. John Siret, Overseer of Watering and Lighting. Superintends those duties in that part of the Town lying to the south of the Scotch Church, the Dhurram-tollah, and all to the southward. Salary Sicca Rupees Sixty. Has been employed for fourteen years. Superintends the lighting generally. Mr. Clarke superintends the watering of the river side. Mr. McCulloch that of Chitpore roads, and Mr. Campbell that of Park street; sees the Engine at Chandpaul Ghaut worked seven hours a day for eight months in the year, and looks after the distribution of the water to the several aqueducts ; has no assistance in looking after the lighting of the streets ; reports when the contractor for lighting neglects the terms of his contract. The Chokeedars are also expected to report in such cases. There are in all at present 307 lamps contracted for, at Company's Rupee One, Two Annas and Six Pic per lamp per mensem ; six more lamps have lately been added for the New China Bazar. The contractor does not furnish the lamps, but only the oil, wicks, &c. and keeps the lamps clean. The lamps and lamp posts are furnished by the Executive Officer Mr. Sevestre. Fines for breaking lamps are applied to replacing such as are broken. Looks after the whole of the aqueducts. The extent of Road watered was ascertained in 1823-24 to be 14 miles. This extent has been added to, but Mr. Siret cannot say how much—will, with Mr. Watts' assistance, ascertain how many cubic feet of water are raised by the engine, and give a statement of the length of road watered from the aqueduct—also how much road is watered at the expense of Government, and how much by individual subscription, with the expense of each.* Mittoo, the Jemadar at the steam engine, attends to the opening and shutting of the sluices. The contract for working the engine is in the hands of Jessop and Co. at Rupees Four Hundred a month, for which they supply fuel, grease, &c. keep the engine in order and work it seven hours a day, during eight months of the twelve. Formerly the contract was for Rupees Three Hundred and Sixty per mensem. The contractor keeps the engine house in repair.

* Statement not given.

Mr. J. J. N. Macan.

Mr. J. J. N. Macan, Deputy Superintendent of Police. Salary Sicca Rupees Two Hundred and Seventy-five ; has been about nineteen years employed. Duty to assist Captain Birch generally. At the Police Office receives instructions from any of the Magistrates regarding matters of Police. Looks after the constables in the execution of their duties. Warrants for arrest of persons pass through him and are handed to some one of the constables by him. He sees that the constables do not neglect their duty. In cases brought up from the Thanas the reports are taken down in writing in books for each division, and the orders of the Magistrates are therein noted. The Thanadars first report verbally to Captain Birch, who directs what complaints ought to be reported. Mr. Macan will make out a statement of his various duties, and of those of his establishment generally.*

Statement not given.

Mr. Bernard Furie.

Mr. Bernard Furie, is clerk in the department of Superintendent of Police. Salary formerly Sicca Rupees One Hundred, to which Company's Rupees Fifteen have been added since February last. Has served about three and a half years. Is principally employed in the Shipping Department taking statements of ships' crews and passengers ; preparing voluntary affidavits ; registering Mokhtar-

namahs and other papers brought by natives for that purpose; assists in preparing abstracts of crimes from the Thanah books; assists generally the Deputy Superintendent as a clerk; has no writers or other establishment. There is a separate Moollah as well as a Brahmin, for administering voluntary affidavits, receives the fees for affidavits, enters them in a book in which the Cashier's acknowledgement of the amount is entered. This book furnishes Mr. Watts with the means of checking the Cashier's accounts. The list of crews, &c. are filed, bound up, numbered and indexed by Mr. Furie. The fee for lists of ship's crew entering is Rupees Three, and for clearing Rupee One. (Subsequently in a note to the Chief Magistrate states, that he neither assists nor is assisted in preparing the annual abstract of crimes; but the whole business of reading the cases, classifying them into the daily abstracts, watching them to their termination, forming the monthly and annual abstracts, is entirely in his hands alone.)

Ramjoy Mookerjee, Cashier, has been employed for forty-four years—salary *Ramjoy Mookerjee.* as Police cash-keeper Sicca Rupees 60, and as Abkaree cash-keeper Sicca Rupees 40 = Sicca Rupees 100. All the cash of the Police and of the Abkaree is kept in the same chest, and along with it the cash of several private gentlemen, as Mr. Clarke and Mr. Dickens, as well as private cash of his own. Nobody ever examines the cash balance in the chest. Once when, by desire of Mr. McFarlan, Mr. Watts examined it, he found rather more than was due to the Police. Mr. Watts did not reckon the Abkaree cash, of the amount of which he had no cognizance. "Being answerable for what is due to the Police, I might throw what cash there is in the chest into the sea. I keep no book shewing the balance of cash in hand from day to day. I keep on slips of paper memoranda of cash received from the Treasury, and of cash paid to the Poddar for distribution." Will prepare a statement both of the Police and the Abkaree cash balance, distinguishing the effective from the non-effective amount; has no security since the death of his surety twenty-five or thirty years ago.

Mr. Philip Delmar, is French Interpreter and Deputy Surveyor under Mr. William Anley, in the European distillery, in the Abkaree department. As French Interpreter receives Rupees Fifty a month and as Deputy Surveyor of European Rum distilleries Rupees One Hundred and Fifty; attends the Police daily in case of the examination of Frenchmen; as Deputy Surveyor examines and enters all passes, granted and received back; produces the book in which those entries are made; all country Rum passed into Town is brought in the first instance to the Police to be gauged and to ascertain its strength, except what is bonded in the Custom House for exportation. With that exception all Rum passed into Calcutta from country distilleries pays six annas per gallon, which is levied at the Police Office, either at once when the parties are not known, or at the latest within the week. The Mohurer of the department, Hullothur Chatterjee, enters the sums received in a separate book, which must correspond with Mr. Delmar's, and the cash-keeper signs when the cash is paid into his hands. Mr. Anley sees that the receipts and payments correspond, and he annexes his initials accordingly. Each Sooree has his separate account besides. Cannot state exactly what Mr. Anley's duties are. There are two gaugers attached, One to the License department and the other to the European distillery department. *Mr. Philip Delmar.*

Mr. W. H. Grant.

Mr. W. H. Grant is a writer in the Judicial conservancy department, enters the quarterly statements of the collections of the assessment, enters also references to the Superintendent of roads in common with Isshurchunder Singhee. Fills up warrants for contempt issued by order of the Sitting Magistrates. Has been employed since 1829 on a Salary of Sicca Rupees Twenty.

Hurriputtee.

Hurriputtee, Assistant Register of Ticka Bearers, keeps in the Ooriah language a list of all Ticka Bearers of whom 10,700 are entered. By means of this register he is able to trace and to produce any one of the whole number. There are about four or five thousand constantly plying for employment. Each man pays six annas for his badge which is supplied by Hurriputtee. Salary Ten Sicca Rupees a month. Mr. Leal keeps a Register in English, shewing the names of each Bearer, his father's name, the place of his birth, and his residence in town, with the number of his badge.

Mr. Julian.

Mr. Julian, a writer under the Superintendent of Police, has been employed for eighteen years. Salary Sicca Rupees Fifty-two. Takes down in writing the verbal report of the Thanadars and Boundary guards. The offences, &c., reported and taken down by Mr. Julian are for the Superintendent's office. The officers of the Sitting Magistrates take the reports of the cases brought before the Magistrates. The orders that have been passed by the Magistrates on the report cases are entered in the same book by Mr. Macan and the book is submitted to Captain Birch for his information.

Mr. Peterson.

Mr. Peterson has been employed for six years under the Superintendent of Police on a salary of Sixty-four Sicca Rupees; keeps the Pay books of the establishment; pays each individual—the total number about 2500; assists the Superintendent in removing any individual and procuring others, and in writing or copying all public documents or correspondence. Notes down all discharges and leaves, and the names of persons employed in their room. Fines imposed by Captain Birch are collected by deductions from pay, and the amount handed over to Mr. Macan, is afterwards expended in furnishing occasionally blankets, great coats, &c. as rewards.

Mr. D. Williamson.

Mr. Duncan Williamson has been recently employed in the room of Mr. Corneill, salary Company's Rupees Thirty; is a writer under the Superintendent of Police; keeps a daily muster of the numbers, well, sick or absent at all the Thanas.

Mr. M. J. Wade.

Mr. M. J. Wade has been employed since June, 1834, salary Sicca Rupees Thirty-five; is a writer in the department of the Superintendent of Police; keeps a register of summonses and subpoenas issued daily; keeps also a report of patients sent by the Police to the Native Hospital, in which the surgeon enters his remarks on the state of the patient at admission.

Samuel Clark.

Samuel Clark; Salary Sicca Rupees One Hundred as Overseer of Strand and adjacent roads; Sicca Rupees Thirty for looking after the bank, and Rupees

Twenty for superintending stone*ballast; employed since 1823; produces a copy of Instructions specifying his several duties.

Syamloll, Persian Moonshee, reads and explains Roobakarees of the Moffussul Courts, whether in Persian or in Bengalee, to the Chief Magistrate; also writes out the Purwanas of Roobakarees sent from the Chief Magistrate's office to the Moffussul; salary Sicca Rupees Thirty-five; has served five years.

Syamloll.

Hushmat Ally, Moonshee, assists Syamloll; keeps an index for reference of all Persian documents, and of the manner in which they have been disposed of; salary Sicca Rupees Twenty-five; has served twenty-one years. Vide Syud Noorali's evidence.

Hushmat Ally.

Buzoo, Jemadar, absent.

Buzoo.

Anwar Khaw, Duftory, served eighteen years; salary Eight Sicca Rupees; employed in the office of the Deputy Superintendent; makes ink, pens, rules books, and seals and deposits the stolen goods in the godown under Mr. Macan's direction, and delivers the same to the proper parties under the orders of Mr. Macan. The key of the godown remains with Mr. Macan.

Anwar Khaw.

Bhoochoo Khan, is a Summons Peon; wages Sicca Rupees Five; has served about ten years; gets presents from the plaintiffs—of four, eight annas or one rupee, as they think proper; was appointed by Mr. Trower. Vacancies are filled up by Captain Birch. There are eight men for each Division, with one Jemadar over the whole. The Jemadar musters the Peons and attends on Mr. Macan. No dustooree is paid to him by the Peons. One of the Peons says he gets about one summons every other day; another that he does not get above six or seven to serve in the month. Serve subpoenas and give notice to parties and to the Thanas; also carry notes or letters when the Magistrates' peons are not present.

Bhoochoo Khan.

Lieutenant W. Abercrombie, Engineer, Superintendent of roads and of conservancy and public works; salary Company's Rupees Six Hundred and Fifty; appointed about a year ago. Mr. Sevestre is his Executive Officer and Mr. Clark, Overseer of the Strand roads, for his immediate Division. With respect to repairs of roads, either orders them to be repaired on his own observation of what is requisite, or from the reports made by the Conservancy Sircars, or the applications of individuals. Reports of repairs required by drains are likewise under his cognizance. Employs a writer to copy all his proceedings; reports, orders on those reports, and estimates. There were formerly six Sircars for the Town and one for Kiderpore for measuring Khoa at the Depots. Those had ten Peons under them. Instead of those Sircars there is now one Supervisor who sees to the measurement of the Khoa by the Peons who deliver it over from the several Depots to the establishment of the Executive Officer. The four European Overseers look after the cleansing of the roads and drains. Mr. Green and Mr. McCulloch have each a Gowkhana under their charge. Examines and checks the estimates and bills of the

Lieut. W. Abercrombie.

Executive officer which are then passed by the Chief Magistrate, according to whose orders Mr. Watts settles the Executive Officer's accounts. Has no account department. The bills from the Gowkhana pass through the same course. So also the contractors' bills for coolies, cattle, and hackeries, for the scavengers department. The charges are first examined by Sibnoth Chatterjee, writer, and then some of the items checked by Lieutenant Abercrombie, which being found correct the bill is passed. Receives from the Native Supervisor a daily statement of materials for the repairs of roads furnished by the contractors, which have been delivered to the Executive Officer, whose outlay is checked by the inspection and measurement of the Superintendent. The Contractor for conveyance of the Khoa is paid according to the quantity delivered to the Executive Officer and to the distance to which the materials are to be conveyed: the Supervisor reports on the quality of the materials, which are also inspected by the Superintendent. All cases of alleged encroachment reported to the Magistrate are referred to the Superintendent, who satisfies himself by ocular inspection; of these, there are sometimes as many as half a dozen places to be visited; thinks that these cases might in general be safely referred to the Overseers—and to the Superintendent only in case of dispute. Superintends the lighting and watering and collecting subscriptions for watering. Mr. A. has also to examine and report on alleged nuisance from drains. *Mr. Sevestre*, the Executive Officer, is considered by Mr. Abercrombie to work on more moderate terms than could be obtained from any European Tradesman. The rates have been reduced by the last Superintendent as low as possible. Has no establishment allowed him at the public expense, except one Sircar and one Bricklayer. He makes what profit he can out of his estimates.* Mr. Abercrombie thinks that though a Native Mistree might be engaged for the duty on a smaller salary and would engage to work on equally low terms, there would be constant danger of imposition by inferior materials; Mr. Sevestre, as Executive Officer, looks after the repairs of the roads, of which the materials and labour are supplied by contract. For this he has nothing but his salary, unless in his bills for cutting and levelling the roads preparatorily to laying on the new materials which are passed as charged. There are twelve men employed at the Gowkhana, as smiths and carpenters, who are employed in repairing the carts. Their aggregate salaries amount to Company's Rupees 106-2-4. They have no other pay or emoluments. Teencowree Jemadar, put down as Overseer of the Circular Road, is a Pensioner (subsequently added—but he reports whenever repairs are given or required to the Circular Road.) There are seventeen Sircars and twenty Peons employed in reporting nuisances. Ten Peons, as already stated, are employed by the Superintendent in looking after materials for roads, exclusive of six Peons in attendance. Seven Peons are employed by the Executive Officer in looking after materials, besides six more in attendance on him for occasional purposes. Three are in attendance on Mr. Watts and ten on Mr. Samuel in the executive department. Three are employed with Mr. Statham, and six under Mr. Clark. Two formerly employed have been abolished since Mr. Trower left the office. Eight mate coolies are employed by Mr. Sevestre in superintending the coolies employed in spreading materials on the road. The Head Mahtranee looks after the public tatees. Twenty-four Khalashees are employed under the Overseers in keeping the roads and drains clear. Twelve

* Subsequently corrected.

Chokeedars are employed in preventing nuisances on the Plain. Five boats are employed in conveying away filth, and one in sinking carcases.

Hurrydoss Sen is employed in the room of Madhubram Dutt, as a writer, under the Superintendent of Police. Salary Sicca Rupees Thirty-two. Keeps the list of parties sentenced to the House of Correction, also keeps in a book for the purpose, copies of Purwanahs sent to be backed by the Magistrates of Calcutta. The English and Bengalee are copied by Hurrydoss, the Persian by Mudungopaul Mojoomdar. The average of commitments to the House of Correction are two or three per diem. Of Purwanahs the same—or less. Hurrydoss Sen.

Radhaballub Dutt, writer, under Superintendent of Police, for five years. Salary Sicca Rupees Twenty; keeps a Register of all cases of theft averaging from twelve to twenty per diem. Prepares daily a list of from twenty to thirty prisoners in the General department; keeps a list of arrivals and departures taken from the reports of two Sircars, who are employed at the Ghauts for that purpose, as part of the River Chowkec Establishment. There has been in January about one entry per diem; keeps a statement of gunpowder passed into Town by permission. There has been an average of one entry for two days in January. Keeps a list of Europeans sent to the General and Police Hospitals, averaging fifteen a month, also of persons sent to the Insane Hospital, averaging six or seven per mensem; also Dawk receipt book and Receipt for letters delivered in Twenty-four Purgunnahs, or by Hurkuras of the Police. Radhaballub Dutt.

Bykunth Bonerjee employed since 1830. Salary Thirty Sicca Rupees per month. Enters in English in a book reports of prisoners in the Town Guard from a Bengalee book written by Ramtonoo Chatterjee, containing names of prisoners, number of the Thana, date of confinement, offence and sentence: the number for the month of October 1836 is 338. Enters in a Book weekly reports, also made up in Bengalee by Ramtonoo Chatterjee, of the Town Guard, Thana and Kattara Prisoners, for Mr. Macan, specifying names, division, and number of the Thanahs, date of confinement and the offence. Number of entries in the week, ending 16th January 1837, amount to one hundred and twenty. Copies depositions taken by the Chief Magistrate in the usual form, the number of which amount in four or five days, about the time of the Criminal Sessions to about five daily, and in ordinary times four or five a month. Prepares Calendar of prisoners committed for trial in the Criminal Sessions. Writes contingent bills for repairing Thanahs, and all other contingent bills passed through the Superintendent of Police's Office. Sometimes fair copies letters drafted by Mr. McFarlan, Captain Birch and Mr. Macan on Police matters. Bykunth Bonerjee.

Mudungopaul Mojoomdar, employed ten years, salary Thirty Sicca Rupees, enters in a book Persian Notices, Subpœnas, Roobakarees received from the Muffusul Police and Courts. Reads and explains to Mr. Macan Persian Robakarees received from Muffusul for apprehension of Runaway prisoners. Enters in Bengalee in a book the number of daily deaths and amount of funeral charges of the Hindoos by the report of the two Ghaut Sircars stationed Mudungopaul Mojoomdar.

at the Nimtolah and Cossy Mitter's Ghauts, specifying the disease by which the deaths occur, and in the same way in Persian the number of monthly Mussulman deaths, &c. by the reports of two men stationed at Manicktollah and Cossia Bagan by the Mussulman community, who are not paid by the Police.

Ramtonoo Chatterjee *Ramtonoo Chatterjee*, employed Thirty-four or Thirty-five years, salary Sicca Rupees Ten per month, keeps Bengalee Phuttuck book of prisoners in the Town Guard, Thannas and Kattara, Weekly Reports of ditto, keeps an account of the daily Khoraky allowed to prisoners, and the Moodies' monthly bills for the same are examined by him before they are passed for payment. Christian prisoners get one anna per day each, Native boys, six pie, and grown up men, nine pie. In the Female Kattara, the Christians and those Native females who have no relations get one anna, girls six pie, grown up women nine pie, and the children of prisoners three pie per day. The Phuttuck book specifies name of the prisoner, his father's name, caste, number of the Thana by which committed, name of the prosecutor, nature of offence, date of confinement, orders passed by the Magistrate. In the Female Kattara book, the name, caste and age of the prisoner, number of the Thana by which committed, date of confinement, name of the prosecutor, number of the Division in which tried and orders of the Magistrate are inserted.

Nusrodeen Mahomed *Nusrodeen Mahomed*, Nauzeer, employed since 1816, salary Fifty Sicca Rupees per month, attends daily on the Superintendent of the Police, when he hears the Thana Reports. He produces the Chokeydars found guilty of neglect of duty, before the Superintendent. When a theft is committed at any house, he is sent there for enquiry, receives informations from the inhabitants and Goindahs and represents them to the Superintendent. Gives any information which may be required of him by any of the Magistrates. Being acquainted with the old offenders, when any of them is apprehended for a new crime, his former delinquencies he represents to the Magistrates and the Superintendent. Obtains information as to the river thefts and communicates the same to the Superintendent, and uses general surveillance.

Petumber Chatterjee. *Petumber Chatterjee*, Bengalee Mohurer, salary Sicca Rupees Fifteen, has been employed for about ten years. The stolen goods that are brought before Mr. Blaquiere are put under his care. Those that come before the other Magistrates are placed under Mr. Macan's charge. Those entries occupy thirteen double pages of a Bengalee Book for the year 1836. The articles are kept in a separate godown of which he keeps the key, has no other duty at present. When property remains unclaimed, it is sold by Auction, and the proceeds paid to the Treasurer. Has no receipts for such payments. Mr. Macan says the stolen property and unclaimed goods that are committed to Petumber Chatterjee's charge are not delivered to him for sale, neither do the proceeds pass through his hands. Mr. M. produces a receipt from the Cash-keeper for Sicca Rupees 3,826-14 paid to him on this account on the 7th November 1836. Keeps an indexed book of sales.

Buxoo. *Buxoo*, Jemadar of Peons, Pay Sicca Rupees Sixteen, has been employed for Twenty-five years. The Summon Peons are under his superintendence. Does not appoint them, nor give them any orders, calls the Plaintiffs and Defendants in the Office of Mr. McMahon.

Hulodhur Chatterjee, a Writer in the European Rum License Department, keeps the accounts with the distilleries. Copies the applications for passes and the Gauger's reports into a book, when they are examined and certified by Mr. Delmar. There are on an average seventy such entries monthly, occupying each half a folio page, also a book into which those passes are abstracted, giving a tabular statement shewing the persons to whom passes are granted, the quantities passed, the distilleries whence passed, and the amount of duties. This statement for three months occupies twenty pages folio. The additions are not made up for the last four months. Keeps a daily receipt book which is signed by the Khazanchee. The receipts for each day are paid over at once, after which Mr. Anley puts his initials. These daily receipts are then abstracted into another book shewing the monthly receipts from each of the four distilleries. Wages Sicca Rupees Thirty-five, has served for fourteen or fifteen years. Hulodhur Chatterjee

Mr. Delmar states that as Deputy Surveyor, he may be sent by Mr. Anley to observe the distilleries of European Rum, to see whether the Sircars and Peons be in attendance, to watch the quantity made and removed. Mr. J. Andrew acts for Mr. Paul as Gauger, when he is unable to attend from illness or otherwise. Has not at present any employment at the wharf. The Custom House employs a separate Gauger. This department has nothing to do with European spirits imported by sea. Mr. Delmar.

Lieutenant W. Abercrombie. The receipts he grants for materials supplied by the contractors are compared with the daily reports received from the Khoa Sircar, which are added up at the end of the month by his writer; can hardly check it if the Khoa Sircar is dishonest and makes false reports; as there are several depots, the Sircar must necessarily depend upon the reports of the Peons. The hackeries coolies, bullocks &c., are all supplied by contract, and the bills are checked from a daily report (of which a copy is furnished). Also checks the bills for cleansing from daily reports (of which a copy is delivered) and those reports which are signed by Mr. Statham Muster master, Lieutenant Abercrombie compares again monthly with the reports sent in by the different Overseers. The daily reports do not include the Strand roads, reports of which are furnished by Mr. Clark monthly. Lt. W. Abercrombie.

Mr. H. G. Statham, at the corner of the Dhurumtollah road, musters the two Southern Divisions one day, and at the corner of the Mutchwa Bazar road on the Circular road called Mirzapore, musters the two Northern Divisions another day. Thus attends the two musters alternately; the day he does not attend the muster of the Northern Division he sends a peon to see and report to him as to the number of persons working, which report he compares with the returns of the Overseers; this peon is also employed in keeping the native subordinates in check, that they may not allow the workmen to go away during working hours. The same course is pursued in the Southern Division; makes a daily return of the muster, deducting all absentees and those who misbehave. The peon he finds a very effectual check. Mr. H. G. Statham.

Lieutenant W. Abercrombie. The Superintendent's measurement of the Khoa after it has been laid down has, since giving his evidence, been determined by the Chief Magistrate to be an insufficient check, and the deductions made by him from the Lt. W. Abercrombie.

Khoa and carrying contractors' bills re-allowed; there is therefore at present, no effective check on the measurement.

Mr. H. C. Watts.

H. C. Watts. (additional statement.) The preparation of the annual statements of crimes for the Chief Magistrate's Report to Government is also a part of his duty, and is one of immense labor. The Police Hospital Establishment has undergone some change since. The employment of convicts in making flour, &c. is found much more profitable than making Soorkie. The flour making system was introduced in 1835. The more favorable account shewn for 1836 is therefore accounted for. The additional pumps put up last year occasion the increase of the rate of Messrs. Jessop and Co.'s contract for working the Steam engine at Chandpaul Ghaut. The authorised establishment of Female Kattarah is Co.'s Rs. 33-4-1 per month, but the actual establishment is something more. The eight Burkundosses charged in the Town Guard establishment are peons attending at the Police Office with prisoners. Besides the fixed establishment for sinking dead bodies there is a small monthly charge for ropes, &c. Mr. McFarlan's plan was to discharge all the Sirkars for reporting nuisances in the Conservancy department, and to make the Thanadars do their duty. He has since changed his opinion on this subject. Examines the monthly abstracts of cases disposed of in the Conservancy department and sees that the amount of fees and fines given, corresponds with the Magistrate's case book. There is no comparison made with the cashier's book though he has always found the fees and fines brought to credit to agree with Madubchunder's abstracts.

No. 26.

W. C. Blaquiére, Esq.
2d March, 1837.

No. 26.

2d March, 1837.

WILLIAM COTES BLAQUIERE, Esq. *further examined.*

Q. 1st. You promised to send us copies of the monthly statements of the Abkaree Tax as furnished to Government since May last, have you brought them with you?—A. No, the accounts are not yet sanctioned by Government, there are some difficulties in the Audit Office, in consequence of the Abkaree Accounts never having undergone audit before.

Q. 2. If the delay lies in the Audit Office, we can apply to Government about it?—A. No, there is no necessity for that, I expect to get back the audited accounts soon.

Q. 3. But you can send us copies of the accounts you sent into Government unaudited; we are desirous to make our Report and we cannot complete it without these accounts?—A. Very well, I will send the unaudited copies as you wish it.

Q. 4. It appears that an impost called "still head duty" is levied at the rate of six annas per gallon on all rum brought into the Town from the country distilleries, except what is bonded at the Custom House for exportation, the collection of which is in your hands—and that the produce of this impost for the year 1836, amounts to Sicca Rupees 22,359 0 0 while the charges of Establishment at Sa. Rs. 1,024-6-4 per month are Sa. Rs. 12,292 12 0 and your Commission at 2½ per cent..... 558 15 7

12,851 11 7

leaving only net produce of.....Rupees 9507 4 5 surely the charges are too heavy?—*A.* Yes, they appear so at present. There were a number of distilleries under my charge when the establishment was fixed. They have now dwindled away to two, but the establishment remains the same. It is a large establishment. It is all under me as Magistrate of Twenty-four Purgunnahs and as a Muffusil establishment. The duty of six annas per gallon is not an *Import Duty*, but a 'still head duty levied on all rum manufactured according to the European process wheresoever manufactured under a Mofussil Regulation. There is no such a head of duty as import duty on Bengal Rum, none being ever levied.

Q. 5. Mr. Anley is put down as Surveyor at a salary of Sicca Rupees Three Hundred and Fifty per mensem, and Mr. Delmar as Deputy Surveyor at Sicca Rupees One Hundred and Fifty per month—What are they Surveyors of?—*A.* They survey the size and number of the Distils.

Q. 6. Do they ever go to the Distilleries?—*A.* Very seldom.

Q. 7. Then they are useless?—*A.* No, they are not quite useless, they gauge and pass the rum that comes to Government.

Q. 8. At all events Mr. Anley and Mr. Delmar have very little to do?—*A.* Yes, they have very little to do.

Q. 9. What are the two Gaugers for?—*A.* One for the Custom House Wharf and the other for the Police Office.

Q. 10. Is there employment now on the Custom House Wharf for a Gauger?—*A.* Yes, a great deal of rum comes on the Wharf, some came yesterday and some the day before.

Q. 11. Is this a tax on the people of Calcutta?—*A.* No, it is a duty levied on rum manufactured all over the country, whether brought to Calcutta or not. The licensed rum shops could not consume more than the quantity—(three hundred and eighty gallons per month) for which they pay the retailing tax of Five Rupees per diem.

No. 26.

W. C. Blaquiére, Esq.
2d March, 1837.

Q. 12. Then do you mean to say that this rum is exported by sea?—A. No, the quantity allowed is consumed in Calcutta, the surplus partly exported by sea and partly to different parts of the country, viz. the quantity imported in 1836, amounts to 59,624 gallons, of which I allow 36,480 gallons to be consumed in the eight retail rum shops, leaving an excess of 22,144 gallons, some of which is exported by sea, and the remainder to different parts of the country.

Q. 13. Would not one gauger be sufficient, especially as the Collector of Customs employs a separate gauger?—A. I hardly think one gauger would be sufficient. The gauger employed by the Collector of Customs has nothing to do with us. You might dispense with the services of one gauger. The gauger on the Wharf was useful when Brandy and other European Spirits imported by sea, paid the Police duty of three annas per gallon; which is now consolidated under the new Tariff and collected by the Customs Collector.

Q. 14. How are the thirteen Sirkars employed?—A. They are stationed round the boundary guards and at the distilleries and office.

Q. 15. Under what head is the produce of European distillery tax credited in the Government accounts at the General Treasury?—A. Under the head of Muffusil Abkaree Tax, that is, Still head duty, and as such the amount is levied and remitted by me to the General Treasury, in my capacity of a Muffusil Magistrate, and has no connection whatsoever, with the retail duty on the spirits levied by me in the Town in my capacity of a Justice of the Peace.

 No. 27.

 No. 27.
 D. McFarlan, Esq.
 2d March, 1837.

2d March, 1837.

D. McFARLAN, Esq. *further examined.*

Q. 1. Mr. Watts has stated that Ramjoy Mookerjee, the cash-keeper of the Police, has generally a cash balance of thirty thousand rupees on hand, and by a statement furnished by Ramjoy himself it appears that from May to December of the year of 1836, he had in his hands a cash balance of from thirty to forty-three thousand rupees. Have any steps been taken to reduce this balance, or to enable you to know exactly what sum is actually in the cashkeeper's hands?—A. All money we now receive is sent to the Bank of Bengal, and for the current disbursements we pass orders on Ramjoy against the old balance. This has, I understand, reduced the balance in his hands to about four or five thousand rupees, but the full and complete account has not yet been written up. He says himself that he has overpaid the balance.

Q. 2. Might not the Fire Engine Establishment referred to in your former evidence, be almost entirely reduced from the commencement to the end of the rains, and how are the two constables employed during that period?—*A.* The main strength of the establishment is reduced during the rains, as will be seen by the statement I have furnished. It is necessary to keep up a few hands both to keep the engines and hose in order, and form a small body of experienced hands on which to engraft the temporary ones. We last year made the constables' services otherwise available during the rains, but I find that they are not very fit for the general duties of the Police; there was always unwillingness on Captain Steel's part to employ them.

Q. 3. Might not the cleansing of the Town by contract, notwithstanding your unfavorable opinion expressed on a former occasion, be tried in one Division of the Town, say the Fourth or the Chowringhee Division, where the contractor would be under the supervision of the European inhabitants, subjecting him to a fine by the Magistrate in case of any nuisance being permitted to remain?—*A.* I have no objection that such an experiment should be tried, but I have great doubts of its success. In most parts of the Town the drains are not of masonry but mere ditches. They require being dug out yearly; where there is a constant dribbling of foul water from kitchens and from the cooking of Natives, these drains cannot be kept sweet. I do not know how you could word your contract. For the mere removal of stable dung and offal from the streets a contract could be made; but unless the contractor had well-constructed carts, and had some precise notice where he was to carry his sweepings, he could not contract at low rates. At all events my opinion is, that it never should be tried until we are assured that the inhabitants would take an interest in keeping down expense and in seeing that the duties were properly performed.

Q. 4. If the Magistrates are confined to their judicial functions, could they not also perform the duties of the Commissioners of the Court of Requests?—*A.* I cannot answer this question, because I do not know the extent of a Commissioner's business, but I can say, that one Magistrate may very well do twice the work he does now.

Q. 5. You reckon the monthly expense of keeping convicts in the House of Correction at two rupees and four annas each, is that exclusive of the amount of their earnings by labor?—*A.* Yes, exclusive of the earning.

Q. 6. Is the thirty-five per cent. of produce of convict labor allowed to the keeper of the House of Correction, upon the gross produce or net profit?—*A.* Upon the net profit.

Q. 7. Have you ever compared the expense of the hired and Company's carts for the cleansing of the Town, &c., if so, what is the difference?—*A.* We have constant discussion about it. A hired cart and bullocks would perhaps appear cheaper at the first glance, but its quality is inferior and it would not convey the quantity a Company's cart would carry. This year we have made up all our own carts and we only hire bullocks now.

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D. McFarlan, Esq.
2d March, 1837.

Q. 8. With reference to the list of establishment it appears to us that many of them have not sufficient to do, cannot a reduction be made?—*A.* I have gone over the list several times, but I find it very difficult to touch the Division Magistrates' establishments.

Q. 9. But we also allude to some in your own Office, for instance Womachurn Doss and some others do not appear to have much to do?—*A.* In my Office every one has plenty to do, Mr. Watts complains of want of hands. I subjoin a statement of his in which he very justly, I think, asks for a better establishment.

Q. 10. In the Conservancy Department Mr. Samuel does not appear to have much to do?—*A.* Mr. Samuel is an old servant; I recommended to Government four years ago a reduction on the whole of the Conservancy establishment. I add a letter from Government of the 19th December, 1834, and my reply, together with a schedule showing the savings subsequent to my appointment.

No. 28.

Mr. William Anley,
6th March, 1837.

No. 28.

6th March, 1837.

MR. WILLIAM ANLEY, *examined.*

Q. 1. How long have you held the situation of the Surveyor of Rum Distilleries?—*A.* For fifteen years.

Q. 2. What is your salary?—*A.* Sicca Rupees three hundred and fifty per mensem.

Q. 3. What are your duties as Surveyor?—*A.* I superintend the Rum Distilleries under Mr. Blaquiére, prepare licenses for their establishment, have charge of the office duties, inspect the importation, gauging and proving of all Rum, superintend the levying and collection of the duty, and paying the amount into the hands of the cashier; the title of the appointment is that of Surveyor, but the duties performed by me (as well as my predecessor) are those above described.

Q. 4. Do you visit the Distilleries?—*A.* If any occasion occurred it would be my duty to visit the Distilleries, but this has not happened of late years. I receive daily reports from my own sirkars of all that is done at the Distilleries. A book of monthly Bengalee reports is kept on record; formerly I checked the importation of Rum on which duty had been levied in the Moffussil, levying additional duty when the gauging shewed that the spirit had been originally under-charged. The sirkars and peons are stationed by me successively at the different places, being commonly changed once a year.

Q. 5. How many Rum Distilleries are there under charge of Mr. Blaquiére?—*A.* There are now at work only four Distilleries, of which three are at Sookchur

and one at Fort Gloster. Formerly there was a large Distillery at Acheepore, another at Akra, one at Ishera, and one at Khidderpore, besides one at Bandel, now under the Collector of Hoogly, and one at Dhoba, now under the Collector of Burdwan.

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Q. 6. How are the thirteen sirkars employed?—*A.* Three or four of them are stationed at Sookchur and one at Fort Gloster; the others are stationed by Mr. Blaquier, three at the Police and the others with the Boundary guards.

Q. 7. How is the duty adjusted?—*A.* The shopkeepers are frequently allowed a month's credit for the duty.

Q. 8. You have a separate account with each shopkeeper we believe, will you produce these accounts?—*A.* I have not brought them with me, but will send them for the Committee's inspection.

Q. 9. Does all the Rum distilled pay the still head duty?—*A.* Yes, except that which is bonded at the Custom House for exportation, much in fact of what is brought to the Police to be gauged and which pays duty is not consumed within Calcutta. A pass is directed to be given by the Distillery Sirkar for the quantity applied to be brought into town to be gauged and proved. The Rum is accordingly accompanied by a chalaun from the sirkar and peons attached to the Distillery, and after duty paid the chalaun is receipted and returned to the sirkar at the Distillery as his voucher and a rowanah is given to the owner, which enables him to convey the Rum any where but to the retail shops unless specially directed.

Q. 10. Have you any knowledge of the quantity of Rum sold in the licensed retail shops?—*A.* No; I do not check the quantity consumed by these shops.

Q. 11. Have you any other duties to perform than what you have mentioned?—*A.* Formerly all the Rum provided for Government by contract and which amounted from forty to sixty thousand gallons per year was gauged, proved and assessed by this department, and the Distilleries were under the surveillance of the Surveyor, but this has not been the case since the Burman War.

Q. 12. Will you look at this list of establishment and state your opinion whether it could be reduced?—*A.* The establishment has become disproportionately heavy and more than adequate to the existing duties of the department. I think the European Distillery and License Departments might be managed by the Officers of my establishment. A wharf gauger has now become unnecessary. Mr. Andrew, the clerk of the License Department, having resigned, I am willing to undertake his duties in addition to my own.

Q. 13. Do you think it would be expedient to levy the same still head duty on Bengal Arrack as on the Rum reducing the shop tax on both?—*A.* I think such a course would be expedient, and that on such an arrangement the use of Rum would greatly supercede the more deleterious spirit sold as Arrack or Doasta, which is distilled with an intoxicating drug. (*The witness gives in a statement of the size of the stills at Sookchur and Fort Gloster.*)

No. 29.

Capt. F. W. Birch,
6th March, 1837.

No. 29.

6th March, 1837.

CAPTAIN FREDERICK WILLIAM BIRCH, *further examined.*

Q. 1. With reference to what you formerly stated, in respect to the checks on the assessment collections and outstanding bills, what arrangement have you made for a more efficient check?—*A.* I have not been able to fall on any method of checking the actual collections by the bill sirkars, but by turning off some who were negligent and introducing more active persons in their stead, the rates of daily collection have been greatly increased.

Q. 2. Are there still many remissions allowed for unoccupancy?—*A.* There have been fewer remissions of late on the ground of non-occupancy.

Q. 3. Do the Distraining Bailiffs receive any per-centage beyond the costs formerly mentioned upon the levy by distress?—*A.* There is at present no per-centage charged besides warrant costs on distraints. The Constables receive their warrant costs as their remuneration.

Q. 4. It appears that besides the ninety-nine persons employed on the river, the Police force consists of one thousand eight hundred and forty-seven persons, exclusive of European Constables, and this force appears to be classed as follows:—

THANA ESTABLISHMENT.

Thanadars,	37
Naibs,	111
Thulpuhroos stationed at the Thanas,	74
Day Chokeydars,.....	444
Night ditto,.....	723
	<hr/>
	1389
Town Guard,.....	128
Pyke Guard,	83
Boundary Guard,	247
	<hr/>
	1847

Will you be good enough to state the duties of the several classes above enumerated?—*A.* The Thanadars have the general superintendence of the establishment of their respective Thanas and the charge of their several Divisions. They are expected to enquire personally into all cases which may occur during the day and night. To go their rounds at least once during the night. To attend at the Police with prisoners in custody. They are answerable for the conduct of their respective establishments to the Superintendent of Police, before whom they attend every Saturday to

give an account of the past week and are liable to be sent for at any hour to prosecute any particular enquiry. The Naibs are divided into head and patrol Naibs—in each Thana there are one head and two patrol Naibs. The Head Naib is a sort of deputy of the Thanadar, in whose absence he acts as head of the Thana. He also goes his rounds in common with the patrol Naibs, so that one Naib from each Thana is supposed to be on the rounds throughout the day and night. The rounds, are similar in duration to the watches on board a ship. The Naibs have also to bring up their own cases, that is, parties apprehended by them, before the Superintendent of Police, and if directed, before the Magistrates. One Naib from each Thana attends daily at the Office of the Superintendent of Police to report the result of the cases of the previous day, which had been taken up to the Magistrates, and the occurrences since the previous day's report. They are liable to detention at the Police Office to give evidence in the cases they bring up and until the several causes are disposed of.

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The Thulpuhroos are always stationed at the Thanas, of which they have the special charge. There are two to each Thana, who relieve one another during the day and night, and are answerable for the safety of the Thana and all property brought to it. In cases of sickness or unavoidable absence of the patrol Naibs, the Thulpuhroos are expected to take their rounds. The older and more experienced Chowkeedars are appointed to this office. They have hence the particular charge of the Thanas and never bring up or attend with cases, unless parties are apprehended by themselves when on the rounds. On Sundays they attend before the Superintendent of the Police, instead of the Naibs, to report the state of the Thanas. The day Chowkeedars accompany the Naibs in their rounds, keep watch at the cross roads during the day, attend at the Police Office with prisoners and perform the general duties of day Police. The night Chowkeedars are stationed at sun set at their respective posts called Ghatties, mostly two Chowkeedars to each Ghattee, one remains to keep watch at the Ghattee, while the other patrols to a certain extent round the Ghattee to which he returns and relieves his comrade, who in his turn patrols, and so on during the night. There are three hundred and seventy-seven Ghattees throughout the town, and seven hundred and twenty-three night Chowkeedars. In some of the smaller Thanas there is only one Chowkeedar to each Ghattee, whose duty is precisely the same as when there are two. The night Chowkeedars are liable to attend at the Police to give evidence and remain until the cases are disposed of.

The Boundary Guard is divided into twenty-two Thanas, distinct from the thirty-seven River or Town Thanas, and form a cordon all round the town. Those stationed on the south west or river side, may be considered part of the River Police, as they have charge of the Ghats and Custom House. Act as a check on the introduction of stolen property into the town from the river, and are also employed to check the importation of illicit salt, the Superintendent of Calcutta Police being ex-officio Superintendent of the Calcutta Salt Chowkies. Those stationed on the north and west boundary patrol round the town during the night, prevent stolen property from being carried out of the jurisdiction into the Twenty-four Pergunnahs, and the entrance of marauders from outside into the town. Also importation of illicit spirits and salt. The whole of the Boundary Guard also furnish parties to

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attend processions and keep the peace, and one from each Thana attends every morning before the Superintendent of Police with the reports of the night. The Town Guard is inadequate to the duties it has to perform. The duties of this class are to guard the Phatuk or Lock-up House and Town Guard, the Police Office, the Grand Jail and House of Correction and the Collector of Assessment's Office, to attend on Sundays at the different Churches in Calcutta, to attend all processions to keep the peace, to furnish parties to go out into the districts with Purwannahs for the apprehension of offenders, to escort prisoners to and from the Police, to act on any emergency in support of the European force, and in conjunction with the Pyke guard to patrol the whole town on what are called the Huzoor rounds or the rounds sent by the Superintendent of Police to see that the several Thanas are on the alert and attentive to their duties; the Pyke Guard is composed of Bengalees generally of the class of Dooliah, their duties are similar to those of the Town Guard, with the exception that they are exclusively employed when sailors are concerned and in connection with the shipping.

Q. 5. Do you think the different classes might be amalgamated, so that all might be liable to perform their various duties by rotation, or occasionally, as required, so as to admit of a reduction in the number of any of those classes now appropriated for a single duty, for example, might not the day and night Chowkeedars perform the same duties by rotation: all being employed in the day and night duties indiscriminately, and might not the duties of the Pykes and Town Guard, when required be performed by Chowkeedars, if a small addition were made to their number? and whether thus or otherwise the aggregate of the watching establishment might not be reduced?—A. Certainly not. It is absolutely necessary to keep the night and day Chowkeedars distinct. The night Chowkeedars receive a lesser rate of pay than the day Chowkeedars, who are liable to detention at the Police Office—to be sent off with prisoners—to accompany the officers in searches, &c. It would be quite impracticable to establish a routine of relief and watch so that the duty should fall equally on all. The day Chowkeedar is glad to get his rest, and the night Chowkeedar (who is only when absolutely required, called on in the day) has had his rest, and is ready for the performance of the night watch, neither can the duties of the Town and Pyke Guard be performed by the Chowkeedars, who are wanting in the physical strength and courage of the up-country men, who form the Town and Boundary Guard. The several establishments are fitted for their particular duties, which should be kept as distinct as possible, any amalgamation would be attended with mischievous results, and I would strongly recommend an addition instead of a reduction of the present Police force, which might then be perfectly adequate to the performance of other duties, in conjunction with their present ones.

Q. 6. Might not the Thanadaree establishment, in particular the Boundary guard, be entrusted with the prevention of illicit importation of spirits and illicit sale in unlicensed shops?—A. The former duty is already very generally performed by the Boundary Guard and the latter by the Thanadaree Establishment, in as far as reports of such unlicensed sale are made to me, and forwarded by me to Mr. Blaquiere, whose particular Department that is.

Q. 7. Might not the Chowkeedar Establishment be employed in reporting encroachments or other nuisances as well upon ruinous buildings, obstructed or filthy drains, unrepaired roads, &c. and other matters requiring the attention of the Conservancy Department?—A. Reports of ruinous houses are already made by me to the Chief Magistrate, and sometimes of nuisances; my duties take me daily into all parts of the town, and I have the opportunity of observing all that requires to be amended. I have neither the knowledge nor the time required to superintend the making of roads or drains, but for all other matters of conservancy I have always considered them strictly allied to the duties of a Superintendent of Police, and consider myself and my establishment quite adequate to the duties of general conservancy.

Q. 8. Would it add much to the labours of your watching establishment to report upon empty houses?—A. I could not depend solely on the watching establishment for such report. They act as a very good check on the present mode.

Q. 9. Could you with your existing establishment undertake the collection of the Abkaree under the license department?—A. I think with a small addition to my existing establishment (and certainly with a great saving in the present cost of collection) that I could undertake the duties of the Abkaree collection.

Q. 10. In what way do the Thannah cases come before the Magistrates. Do the Thannahdars report directly to them or do you direct the Thannahdars as to the cases which it may be necessary to bring to the notice of the Magistrates and discharge the rest?—A. All cases are immediately reported direct to myself at whatever hour of the day or night they may occur—I make enquiries and direct such cases as I think necessary to be taken before the Magistrates, but all proceedings, in limine, are on my own responsibility, and during the night and from the previous evening until office hours on the following morning, and from Saturday evening until office hour on Monday morning, I am obliged to confine or release on security, to search and apprehend as I think the case may warrant. Of the cases brought up during the day, some I settle amicably, others I dismiss or direct the parties complaining to take out summons before one of the Magistrates, and those of importance and requiring judicial investigation I direct to be taken before the Division Magistrate.

No. 30.

J. H. Stocqueler, Esq.
9th March, 1837.

No. 30.

9th March, 1837.

J. H. STOCQUELER, Esq. *examined.*

Q. 1. Do you know of any instance of premises in town being inaccurately valued by the Assessors for the purpose of Assessment?—*A.* I have heard that owners have sometimes imposed on the Assessors as to the rents received from their premises, but am not aware of any instance from my own knowledge.

Q. 2. Have you any suggestions to offer for the improvement of the Assessment of the town?—*A.* I think that a tax, independent of the Assessment, might be levied on the occupiers of Houses, granting them the right of controlling the disbursement by Committees of their own nomination, not that they would tax themselves, but that they would more cheerfully submit to any necessary impost over the application of which they held the control. The tax might bear relation to the amount of house rent paid, or taxes might be levied on wheel carriages or horses. Some of the Members of those Committees ought to be invested with some Magisterial powers, and receive a remuneration for their trouble. This would enable Government to reduce the number of Police Magistrates. I think that the Superintending Engineer and Overseer of Roads ought to be under the control of the Committees of inhabitants.

No. 31.

D. McFarlan, Esq.
24th April, 1837.

No. 31.

24th April, 1837.

DAVID MCFARLAN, Esq. *further examined.*

Q. 1. It appears that notwithstanding the precautionary measure adopted by you to reduce the cash balance in the Police Cash-keeper's hands, as stated in your last examination, you have not only been deceived in your supposition that the balance was paid up or considerably reduced, but that an embezzlement of some extent has been since discovered, what is the result of your investigation upon this?—*A.* There is now due from the Treasurer, to my Office, about 13 or 14,000 rupees. The cash balance in Ramjoy's hands was reduced 17,000 rupees in the months of January and February, and had the remittance he was required to make

to the General Treasury been made (and it was not until the middle of March that I discovered it had not) it would have been still further reduced by 7,050 rupees, leaving no more than 6 or 7,000 rupees to be accounted for; a sum of 2,500 rupees has been paid and we anticipate that 13,000 will be paid shortly.

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24th April, 1837.

Q. 2. What measure have you adopted to guard against loss by embezzlement in future?—A. The system is now altered. The orders on the General Treasury for cash are now sent into the Bank of Bengal for realisation, and payments are made by cheques on the Bank drawn by me. These cheques are signed with the bills or vouchers pinned to them. There is never more than 4 or 500 rupees retained in the Office, and that amount never for more than a day or two during the payment of the Establishment. The new arrangements are found to work well.

Q. 3. What was the cause of the failure of the appointment of the Municipal Committee recommended by you in 1833?—A. The failure was caused by the indifference of the inhabitants.

Q. 4. What attempt did you make to form the Committee for the appointment of which you were authorized by Government to arrange the details, and what practical mode did you adopt to come to the conclusion referred to in your pamphlet?—A. My answer to this question must allude to general considerations. I am hardly at liberty to mention the individuals by name on whose opinions and feelings I chiefly relied. They were not matter of record and cannot now be pointed to as evidence. When the paper on this subject was printed in February, 1834, the people who attended to the matter at all, were somewhat surprised at such sentiments being entertained by the Government and those employed by it. Some were gratified and others quite the reverse. The press I think applauded, and then shewed that the veto was enough to negative the whole question. I had calculated on some members of the Bar or other usual leaders of the Calcutta public taking up the question. I found them very indifferent about it. Support was promised generally and coldly; no one was disposed to take a lead. I believe that a requisition for a meeting if it had been called would have been signed by few and certainly not by those whose assistance would have been desirable. I mean men accustomed to business of the sort. Besides the only use of such a meeting would have been to have approved of the plan and to resolve that voting should commence in some division of the town. They could not have compelled men to vote or people to serve as Committee men. Amongst the native population an effort was made by Dwarkanath Thakoor to get the principal householders together at the Police Office. It entirely failed. There was upon the whole abundant evidence that Calcutta was not ripe for popular measures of this description. If any doubt were entertained on the subject it would I think be dissipated by a perusal of the proceedings of the Town Hall meeting held on the 12th April, 1836, which in fact originated the present Committee. It will be there seen that Mr. L. Clarke, the Chairman, stated that the sole measure out of which improvement would result to the Conservancy of the town was to place it under the control and management of an able and intelligent body of men sitting as an efficient Court of Quarter Sessions. There was no one at that meeting to propose the appointment of Committees, or to suggest the enactment of a law such as I proposed in my address of the 5th February, 1835 to Mr.

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24th April, 1837.

McNaghten. In that communication it was proposed that a meeting should be called on the application of 21 or more householders, in any division. I scarce think that 21 or more householders could be found in any division willing to take the trouble of calling a meeting, and certainly no division in which two-thirds of the persons qualified to vote would exercise their privilege, but unless there were an agreement by a majority in the measures to be adopted, nothing it is plain could be done. Of all evils I know none greater *than* that power acquired by a small minority of the community by means, not of wealth, respectability or public service, but by taking advantage of the letter of some public proceeding. The great use of this discussion has been that people are more accustomed to view the operations and expenditure of the Conservancy as subjects in which they have an interest, and that they are assured that the Government is willing to grant them full power over their own funds as soon as they demand it. In the meantime taxes for the improvement and comfort of the wealthier portion of the town should be imposed by Government, when if I am not greatly mistaken the Committees would in some form or other spring into existence.

Q. 5. Did you call a public meeting?—**A.** No, as above mentioned I did not call a public meeting because I was satisfied that it would be a failure. Improvements of this kind must be demanded by the people—you cannot coax them into adopting them.

Q. 6. What is your impression as to the probability of the inhabitants coming forward now to form Committees for the management of Conservancy affairs?—**A.** I do not think that there is now any more willingness on their part to come forward than there was in 1833. If the enormous taxation and labour of management which will be requisite on any new arrangement, calculated to recast and improve drainage are understood, people could not be found willing to undertake the duty and raise the funds; my opinion still continue unchanged about this. People here are too busy to attend to any thing of this kind unless indeed a heavy taxation is imposed on them.

Q. 7. Was not the circumstance of the *Veto* being reserved to the Chief Magistrate in the 4th section of the proposed Enactment, one of the great objections to the formation of the Committees of the inhabitants?—**A.** It was so, among the people who discussed the project at all.

Q. 8. What is your opinion in regard to cess pools?—**A.** They are exceedingly beneficial; if every householder was to have a cess pool for the deposit of cookroom washings, a principal cause of nuisance would be entirely cut off. The wells must be very carefully looked after and could hardly be left as public privies to the management of the poor. I agree with the opinion expressed by Mr. Blaquiere and think that every person should be compelled to construct a cess pool for kitchen use.

Q. 9. What is your opinion in regard to the appointment of a Clerk of the Markets, with reference to the report of the Police Committee of 1830 (page 17) and of Mr. Meyer's evidence before that Committee (page 92,) and also to the fixing of standard weights and measures under the superintendence of the Clerk of

the Markets and compelling venders to sell by those weights and measures, and empowering the Clerk of the Markets to examine and seize all false weights and measures?—*A.* On this point I agree with the resolutions of Government of 17th November, 1821. It is quite clear that while the Bazars are private property, a Clerk of the Markets cannot be appointed without an enactment to authorize it; such interference would not be justifiable without satisfaction for infringement of private rights, such an appointment must be well paid and would certainly not be worth its cost. If a man likes tainted fish or blown meat, why should he not buy it? If I am offended with the smell, I have only to keep away, and according to my means endeavour to establish a better Market. It might be a good thing to empower conservancy overseers to inspect the state of the drains and the cleanliness of the Markets, and to subject their owners to a fine on conviction of filthiness—further I would not go. That would require a special law; the gates of the Tiretta Bazar were once shut against Mr. Barwell, the Chief Magistrate. The establishment of the Dhurruntollah Bazar has had an effect in cleansing the Tiretta Bazar; the public as they improve in their taste will command cleaner Markets. As for the attempt to regulate all the weights and measures of the town, it is out of the question; the poor native shopkeeper cannot afford to purchase our fine weights—he is found all over the town, in every lane and gully. If the weights in the Bazar are regulated, the principle should be extended every where, we should have the town overrun with the myrmidons of the weight searcher. When he went to inspect, good weights might be produced, when his back is turned, the false would be brought into play, or a plug would be dexterously inserted in the weight (as Rupees are plugged) which would be extracted when the Officer was gone. In fact any system of this kind is clumsy. Your Police mark would often be used to deceive the people. The best security is the alertness of the people, and the placing at their elbow, a ready mode of testing the accuracy of the weight. Standard weights and measures are distributed in the following parts of the town, viz. Chandney Choke Thana, Tiretta Bazar Thana, Haut Khola Thana, the Superintendent of Police Office, and the Chief Magistrate's Office, to which any person may refer to examine the goods purchased or weights of shopkeepers for nothing. I add a copy of my letter to Government dated 29th February, 1831, on the subject of standard weights and measures. We require very much a Bye-law to enable Magistrates summarily to punish persons using false weights and measures—they ought now, strictly speaking, to be committed to the Criminal Session of the Supreme Court.

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D. McFarlan, Esq.
24th April, 1837.

No. 32.

W. C. Blaquiére, Esq.
24th April, 1837.

No. 32.

24th April, 1837.

WILLIAM COATES BLAQUIERE, Esq., *further examined.*

Q. 1. You have heard the question put to Mr. McFarlan respecting the embezzlement of Police Cash by the Cash-keeper Ramjoy Mookerjee. Is there any deficiency in the Abkaree Cash?—A. The Abkaree accounts consist of sums received and transmitted to the General Treasury monthly, deducting commission and establishment. Ramjoy was not a defaulter on the 31st January, 1837. Abkaree accounts were square to that date within one hundred Rupees, (a statement shewn exhibiting balance in Ramjoy's hands in the License Department of Rupees 86-5-7 and European Distillery Department 170-15, Total Rupees 257-4-7). The daily collections of February were received by him and the accounts made up on the 28th. On the 1st March the usual letters to the Sub-Treasurer, transmitting the amount collected in February were written out and signed by me, and delivered to the Cash-keeper, to be taken with the Cash to the General Treasury. On enquiry on the second, by asking for Mr. Oakes' receipts, it appeared that the month's collections had been embezzled, with a few other items, amounting to Sicca Rupees 17,027-15-11 besides 2,194-7 collected on the 1st March, making together 19,222-6-11. A statement of the deficiency shewn.

The sum deficient,	16,137	7	0
January Balance License Department,	86	5	7
European Distillery,	170	15	0
	<hr/>		
	16,394	11	7

Also sums in deposit, —

Amount in deposit of February,	339	4	4
Former account January of License, 134	0	0	
Salaries,	160	0	0
	<hr/>		
	294	0	0
	<hr/>		
	633	4	4

	17,027	15	11
Collection made on 1st March,.....	2,194	7	0
	<hr/>		
	19,222	6	11

Deduct paid on 3d March,.....	8,255	6	0
	<hr/>		

Balance remaining due by the Cash-keeper,.....	10,967	0	11
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which I have made up myself, and therefore no loss has been sustained by Government.

Q. 2. What is your opinion as to the cause of the failure to the formation in 1833 of a Committee of the Inhabitants to manage Conservancy affairs?—A. One great objection was the veto reserved to the Chief Magistrate.

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W. C. Blaquiére, Esq.
24th April, 1837.

Q. 3. Will you state your opinion as to the effect of cess-pools?—A. The drains in the native part of the Town are made receptacles for filthy water; this might be prevented by cess-pools. I have one on my own premises, which has answered. No inconvenience has been felt from it. I think they would be highly beneficial to privies. No less than thirty to forty complaints are preferred weekly of the nuisances caused by the present system of filthy water being allowed to run into the public drains.

Q. 4. What is your opinion in respect to the appointment of a Clerk of the Markets, and regulating the weights and measures under his superintendence?—A. I am favourable to such an appointment. I agree with the opinion expressed by the former Police Committee. In cases where the poorer class of Shop-keepers are unable to purchase fine weights I think a sufficient check would be given by sealing the common stones by the Clerk.

No. 33.

27th April, 1837.

No. 33.

Dr. S. Nicolson,
27th April, 1837.

DR. S. NICOLSON, *examined.*

Q. 1. It has been suggested by the Council of the Native Medical College that the proposed Fever Hospital should be connected with that Institution. There is sufficient space for the building of the Hospital on the Petty Court Jail ground, where the Medical College is situated and the locality is considered favorable. The Professors of the Medical College agree to render their services gratis. The Committee wish to know your opinion upon this proposal?—A. There are several objections to this plan. First, a junction of the sort was not contemplated by, nor proposed to the subscribers, when they were solicited to contribute towards the establishment of a Fever Hospital; and secondly, the vicinity of the Petty Court Jail and the Dissecting-room would in my opinion form an insuperable objection to the resort of the natives to the Fever Hospital.

Q. 2. But if the Fever Hospital is kept separate from the Medical College?—A. The ground is not extensive enough to allow of the Hospital being so far separated from the College as to overcome the scruples of the natives.

Q. 3. There would be no connection. Both the Institutions would be kept distinctly separate?—A. However distinct they might be, the natives could not comprehend the distinction. The contiguity is all they would observe and that would deter them from resorting to the Hospital.

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Dr. S. Nicolson,
27th April, 1837.

Q. 4. Supposing the Hospital to be in separate premises—there is a large space of ground, don't you think it is of great importance to have the assistance of the College Professors and Students and the benefit of the Clinical Lectures?—*A.* I have stated above that I deem it impossible to keep the Institutions so distinct as to satisfy the prejudices of the natives. But supposing that could be accomplished, the services of the College Professors would of course be of use; but I do not see that those services would be more valuable from being rendered by Professors. The patients could receive no benefit from the attendance of the Students, nor from the Clinical Lectures, though the Hospital would doubtless be a valuable School for the Students.

Q. 5. Have you any other practical objection to the two Institutions being on the same ground?—*A.* None but those above stated, which I consider insuperable.

Q. 6. Any objection to the Medical Gentlemen of the College to superintend the Hospital?—*A.* Certainly not. Competent professional Officers must of course be appointed. But whether Professors or not, I think they should receive salaries, however small—salaried Officers would be more efficient, and I should consider it objectionable to have such an Institution dependent on the gratuitous services of any professional man.

Q. 7. Will you give us your opinion in writing on Mr. Hare's letter?—*A.* Yes.

Q. 8. Do you think that the attachment of a Fever ward to the present Native Hospital would be desirable?—*A.* No. There is not space sufficient in the Native Hospital, besides it would be injurious to an Institution which has answered the purpose for which it was established, so well.

Q. 9. Do you think it desirable that the plan of the Fever Hospital should be abandoned for the plan of establishing Dispensaries as proposed by Lord Auckland in Mr. Secretary Mangles' letter of 22d November 1836?—*A.* Dispensaries can in no wise compensate for the want of Hospitals, the sick who come there for relief must perish, unless they can have the support received in a Hospital. Besides a sufficient number of Dispensaries would be expensive, but very useful. Doolies should be provided to send those who cannot continue their attendance at once to the Hospital.

No. 34.

Fever Hospital, 27th April, 1837.

Dr. J. R. MARTIN, *examined.*

No. 34.

Dr. J. R. Martin,
Fever Hospital,
27th April, 1837.

Q. 1. Do you think that the attachment of a fever ward to the present Native Hospital would be desirable?—*A.* No, there is not space. I do not think the union of the two desirable, as the fever institution alone would require such magnitude as to require separation.

Q. 2. Perhaps it would not do to mix the patients?—*A.* No.

Q. 3. Do you think it desirable that the plan of the Fever Hospital should be abandoned for the plan of establishing Dispensaries proposed by Lord Auckland in Mr. Secretary Mangles' Letter of 22d November 1836?—*A.* No; the relief afforded by Dispensaries is so very unequal and of so different a nature from that afforded by an Hospital, that I would on no account abandon the purpose of establishing a Hospital for the treatment of the acute diseases of the country in favor of Dispensaries. It is in an Hospital alone that such diseases can be treated, and in fine I hold a Hospital to be necessary to the efficiency of the Medical practice. In the Dispensaries without support, the sick will die, and several Dispensaries would cost more money than one Hospital. I do not think Dispensaries would do.

Q. 4. You have heard the objection raised by Dr. Nicolson as to the connection of the proposed Fever Hospital with the Native Medical College. If the poor won't come there is an end to the Hospital. The proposed connection offers advantage of cheap Medical superintendence, and we are in want of funds. The subscriptions realized amount to about 46,000 rupees only?—*A.* There can be no sort of doubt of the advantage, if the natives agree. I have already expressed my opinion as to the facility which the connection would grant to the students of the Medical College, in my Notes submitted to the Governors of the Native Hospital dated 9th April 1835, the only doubt in my mind is that the natives will not agree to the connection. Looking over the records of the Native Hospital I find that it started with about 50,000 rupees, and for the first five years there was no addition to that amount, yet how it succeeded afterwards; so I do not despair for funds.

Q. 5. Will you give us your opinion in writing on Mr. Hare's Letter?—*A.* Yes.

No. 35.

Dr. D. Stewart,
Fever Hospital,
27th April, 1837.

No. 35.

Fever Hospital, 27th April, 1837.

DR. D. STEWART, *examined.*

Q. 1. You have heard the proposal of substituting Dispensaries for a Fever Hospital, what is your opinion upon it?—A. I fully agree with Dr. Nicolson, Dispensaries cannot supply the place of Hospitals, their objects and uses are quite distinct. I suspect Lord Auckland formed his idea from the practice in Edinburgh, where young Medical men are in the habit of visiting the poor at their homes. Here, however popular such a system would be, we have neither the men nor the means of establishing it at present.

Q. 2. Will you give your opinion in writing on Mr. Hare's letter?—A. With pleasure.

No. 36.

Mr. Samuel Smith,
27th April, 1837.

No. 36.

27th April, 1837.

MR. SAMUEL SMITH, *examined.*

Q. 1. You are perhaps aware that the Committee of Municipal Enquiry are divided into two parts, one to examine on the state of drains, roads, &c., and the other to investigate the nature, collection and appropriation of the taxes. This Committee is investigating the latter. Will you state what you can propose as to the Municipal government of the town? Have you any plans to propose?—A. I have devoted much consideration upon the subject some years ago, but at last I gave it up as a hopeless case—all my opinions are embodied in this pamphlet, which I published some time ago. I would not take up your time by a repetition (a pamphlet delivered.)

Q. 2. In 1833 Mr. McFarlan with a view of accomplishing the object of the Municipal government of the town being transferred into the hands of the inhabitants, made a proposition to try it in one division of the town, which was sanctioned by Government; but he failed to carry it into effect. The Committee called upon Mr. McFarlan to state the cause of the failure, and he said it was owing to the lukewarmness of the people. Have you had any communication with Mr. McFarlan on that occasion, and what is your opinion as to the cause of the failure?—A. Mr. McFarlan took no further steps after publishing his plan that I am aware of. He was told by myself and others, that many of the middle class of the inhabitants were ready to co-operate with him, provided their suggestions were attended to, and

that they were vested with authority to carry their plans into effect. Believing that these suggestions were not palatable to Mr. McFarlan, the proposition was dropt by him.

No. 36.

Mr. Samuel Smith,
27th April, 1837.

Q. 3. In your pamphlet you mention the Lottery Profits to belong to the Local and Municipal Fund. The Committee lately examined the Lottery Accounts for two half years, and found that the surplus profit is too insignificant after payment of the Establishment and the Town Hall charges, and that there is a large debt still due to Government?—*A.* The debt of the Lottery arises, I believe, from Lord Hastings' grant of the surplus fund of the Petty Court being annulled by the Court of Directors, and the same being transferred to Debit of the Lottery Committee in the Government Books. The amount of grant was about Five Lacks of Rupees, I understand.

Q. 4. On what principle do you think the Abkaree tax is applicable to the Municipal purposes of the town. The Government deny it to be a town fund?—*A.* I will send an answer to this in writing.

Q. 5. You seem to think that the Thanadaree establishment, &c. ought to be supported by the general fund. What is the ground of this opinion, and do you think it desirable that the Magistrates should be paid by the town?—*A.* The assessment is applicable by Act of Parliament for defraying the charges of watching and warding. I do not think the Thanadaree Establishment properly comes under those heads, as great part of it is to keep the peace, and therefore it should be charged to the separate fund. I think the assessment ought only to bear the expense of the nightly watch, leaving the other fund applicable to general purposes. The Government ought to entrust the management of the Town fund to a corporation if they have any wish that the inhabitants should take part in the Municipal Government. It would create a new feeling, and people would readily assist—if you establish the Municipal government, we ought to have Conservancy Commissioners with Magisterial powers, paying them out of the fund. These, with the Police Magistrates, and a number of Honorary Magistrates joined together, I would call a Corporation.

Q. 6. What class of people would you propose to take the Municipal Government in hand?—*A.* The question is what is the Municipal government to be—how it is to be composed—until we know this, I cannot answer your question.

Q. 7. You allude in your pamphlet that the local fund is under the control of the Court of Quarter Sessions, but express some objections as to the present constitution of that Court—what are your objections?—*A.* The Court of Quarter Sessions is not properly constituted. The Magistrates being appointed by Government and liable to be removed at their pleasure, is objectionable. It also appears that nobody but the Chief Magistrate interferes or is allowed to interfere with the assessment—and he acts under the orders of Government, not under the orders of the Court of Quarter Sessions, which is a mere nullity as at present composed.

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—
Mr. Samuel Smith,
27th April, 1837.

Q. 8. You think that the whole Establishment should be placed under the direction of the inhabitants?—*A.* I do. I think the people ought to elect the Magistrates. We should not then see persons in that situation who being otherwise engaged have not time for the duties, and who are obliged to have interpreters.

Q. 9. What scheme can you propose for Municipal Government?—*A.* The heads, I will state briefly, are—the election of Magistrates subject to a Veto of Government. We ought to have a separate body as Conservancy Commissioners with Magisterial power in their own departments.

Q. 10. Why would you unite the judicial duties with the management of funds?—*A.* I do not wish to unite them, if the Court of Quarter Sessions were revived and properly constituted, they might however be united. I do not consider those duties necessarily conjoined, but unless the Commissioners have Magisterial power they cannot act.

Q. 11. How would you form a Committee of Conservancy to manage the receipts and disbursements?—*A.* I would divide the Town into four Districts. A Commissioner for each, elected annually by those who pay the assessment, with Clerks and Establishment, and sufficient powers to enforce his orders, subject to appeal to the Justices of the Peace in Quarter Sessions assembled, that is, summary powers, with a power to appeal; and if there was such appeal open, many Police cases which are now abandoned would be brought forward.

Q. 12. Do you mean to vest the Municipal duties in four Commissioners?—*A.* Merely Conservancy matters.

Q. 13. But the Government of the Town?—*A.* I would intrust the Government of the Town to a corporation to be elected annually. I would have a Chief Magistrate and a body of Magistrates resembling Aldermen, say twelve or sixteen in number, three or four in each division, i. e. I would have one Police Magistrate, one Conservancy Commissioner, and one or two Honorary Magistrates, with the usual establishment, all to be elected by the people annually. With such an establishment I think the people would readily consent to an additional tax if necessary, provided the funds were under the management of persons elected by themselves.

Q. 14. Who should be the electors?—*A.* All the tax payers of certain amount are to have the privilege to vote. The very low rate payers are perhaps incompetent. I will consider the subject and suggest a qualification for votes.

Q. 15. Would you include the Suburbs?—*A.* I would extend the limits of Calcutta, and take in the Suburbs.

Q. 16. That would require other divisions?—*A.* Yes; Garden Reach, Allipore, Entally and Cossipore each to be a division, and they might form a separate corporation or be united to Calcutta by extending the boundaries, which the Government can, I believe, do when they please by proclamation.

Q. 17. Who have concurred in this plan, and amongst the inhabitants who do you know to take an interest in it?—*A.* I can only speak for the Trade Association, who freely concur in it, and would I think take an active part in the business.

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Mr. Samuel Smith,
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Q. 18. When do the Trade Association meet?—*A.* Quarterly—the Committee meet weekly.

Q. 19. Would they give us any representation?—*A.* I have no doubt they would if asked.

Q. 20. Do you think persons in business have time to attend to any thing of this sort?—*A.* I think some of them have time and would exert themselves, as they have done in attending to the business of the Association, which has occupied more time than the proposed Municipal duties would require.

Q. 21. The Committee wish to know the fact from the Trade Association, whether the people are willing and able to undertake and manage the Municipal affairs better than they are at present?—*A.* If you address a letter to the Master of the Trade Association you would get the information you require, I have no doubt.

Q. 22. What was the cause of the failure to the appointment of a Committee of inhabitants in 1833 as proposed by Mr. McFarlan?—*A.* It failed, because a Veto was reserved for the Magistrate of the division, and a final Veto for the Chief Magistrate, and nobody would act under such a system; besides it never was pursued to a conclusion, but allowed to die a natural death, such at least is my recollection of the plan.

No. 37.

1st May, 1837.

Dr. S. NICOLSON.

From what fell from Sir Edward Ryan at the Meeting of the Fever Hospital Committee yesterday I understood, that the Report of the Council of the Medical College, addressed to the General Committee of Public Instruction, and forwarded by the latter to Government, recommended “uniting the Fever Hospital” with the Medical College.

On perusing the Report however I find, that this union is not only not insisted upon, but on the contrary, the Council distinctly state “that some convenient site for the erection of the Hospital be chosen in the neighbourhood of the Medical College, which perhaps would be better than placing the establishment within the walls of the latter building; for many reasons it would be more desirable to keep the two institutions separate, so as to prevent effectually the patients and all strangers

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Dr. S. Nicolson,
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from coming within the precincts of the College, a precaution exceedingly necessary. At the same time it would prevent the native population from confounding the Fever with the Police Hospital, of which the respectable portion entertain a great dread."

In this opinion of the Council I entirely concur, and as the Fever Hospital will be a distinct establishment, and not too near, though in the vicinity of the College, I do not apprehend that the Natives will hesitate to resort to it. But as I stated at the meeting, if the Fever Hospital were erected within the College grounds, I am satisfied the Natives would not go near it, from a belief that it was in some manner subservient to the College.

As I think it has been shown by the Report, that no Hospital now existing in Calcutta, nor indeed all the Calcutta Hospitals combined, would prove adequate, as a practical School of Medicine, it must be evident, that until a large *Native General Hospital* be established in the neighbourhood of the College, and into which all classes of disease, both acute and chronic, Medical as well as Surgical, are admissible, the important end for the attainment of which the Medical College was instituted, will remain in a great measure unaccomplished.

Moreover, without the practical knowledge and experience of disease, which can only be attained by patient study and observation at the bed-side in an Hospital, all the instruction which can be communicated to the most diligent and attentive student in a College, can never qualify him to practise his profession, either Medical or Surgical, with credit to himself, or safety to his patient.

The Hospital for the establishment of which this Committee have been for so many months endeavouring to procure subscriptions, could supply but a small part of the demands of the Medical College as a place of education; as its admissions would be confined solely to cases of *Fever*. But even under its original designation, I think it might form a most important addition to the *Native General Hospital*, which must sooner or later be erected in the neighbourhood of the College by Government, to enable that institution to accomplish the expectations of its founders.

With the view therefore of effecting this object, I would suggest that a recommendation be submitted by the Committee to Government, recommending that three ample and commodious buildings be erected (which might form three sides of a square) in the vicinity of the Medical College. One of these buildings might be appropriated to the *Fever Hospital*, one to cases of Surgical disease, and the other to Medical and Miscellaneous cases. The whole would then constitute one grand extensive *Native General Hospital*, furnishing ample opportunity for the study of every variety of disease.

Should the Government approve of this proposal, and undertake the building of the Hospital, such funds as the *Fever Hospital* Committee have realised would, of course, be placed at its disposal, as a compensation for the wing occupied by the fever cases.

To prevent the natives from apprehending that any connection existed between the Native General Hospital and the Medical College, as well as from various other considerations, it would in my opinion be advisable to place the Hospital under the general superintendence of a Medical man of some rank and standing in the Service, altogether unconnected with the College. The clinical and other Professors of the College might of course be appointed Assistants to the Hospital.

No. 37.
Dr. S. Nicolson,
1st May, 1837.

I may take this opportunity of remarking, that the Officiating Secretary to the Medical Board will be relieved of that portion of his duties on the return of Mr. Hutchinson from the Cape of Good Hope, and if his services could be secured for the Native General Hospital, I know no man better qualified for the office than Dr. James Ranken.

S. NICOLSON,
Surgeon General Hospital.

Calcutta, April 28th, 1837.

No. 38.

April 29, 1837.

DR. J. R. MARTIN.

No. 38.
Dr. J. R. Martin,
29th April, 1837.

The Committee having required from me some observations on the relative advantages to the Native Community of Hospitals and Dispensaries, I beg to submit the following :

1st. The order, regular Medical attendance and administration of Medicine; cleanliness and airiness; diet, clothing, &c. of an Hospital, are found by experience necessary to the successful treatment of acute disease, and to be superior to any afforded by other institutions of whatever kind.

2nd. It has been found in England and Ireland, that it is only the inexperienced of the Medical profession who can afford the labour and time requisite for the care of the out-door Dispensary patients especially; whereas, in all countries the Hospitals are personally attended by the ablest and most experienced Physicians and Surgeons, because there, the patients are concentrated: in short, an Hospital is indispensable to the efficiency of Medical and Surgical practice.

3d. The lower orders of society, whether here or in Europe, can have none of the requisites for the cure of acute disease except in an Hospital, because nowhere else can any funds afford them the professional ability or the careful attendance obtainable in every well regulated Hospital.

4th. By transfer to an Hospital the indigent sick are removed from the locality (and that generally a bad one) where their disease was contracted: this of itself goes far towards the cure of many diseases, such as periodic fevers.

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Dr. J. R. Martin,
29th April, 1837.

5th. The attendance on large bodies of sick in their own houses would be obviously impracticable, even were it desirable; on account of the great number of assistants required in the straggling city and suburbs of Calcutta, to administer treatment, and the cost of such establishment would be enormous.

6th. Dispensaries at the best afford but uncertain and partial relief, in acute disease especially; because the results of treatment cannot be accurately observed; —the patient gets his medicines by chance, and has such diet and clothing as the mistaken notions of friends suggest; or, if indigent, he absolutely wants both. Lastly, he returns to the place where he contracted his disease. Of some of the best conducted Dispensaries at home it has been said that the patients are “lost sight of; some remain on the books for years; no one knows how many are under treatment; according to the fancy of the reporter, those who cease to attend are said to be cured, uncured, or discharged for non-attendance.”

7th. In Calcutta, the very focus of the worst fevers, we have three great Dispensaries, while no hospital or other institution exists, for the treatment of natives suffering from fever and the other diseases incident to a bad climate.

In Ireland, so often cited, there are besides about 500 Dispensaries, 49 Hospitals and Infirmarys, and 70 Fever Hospitals.

These institutions are supported “partly by annual Parliamentary grants, partly by county presentments, and *some portion by private contributions.*”

8th. On the question of adding a fever ward to the Native Hospital, I would observe—1st, that such an union is not desirable on the score of health; 2nd, that it would be a departure from the essential (surgical) purposes for which the institution was founded; and 3rdly, that the only requisite to the complete efficiency of the Native Hospital as a surgical institution is, the removal from it of the medical cases that, spite of all we can do, now crowd it and, to a certain degree, contaminate the air.

9th. A Dispensary cannot be rendered a school of practical Medicine or Surgery for the instruction of Students. It is in a well ordered Hospital alone that a school of practice in either branch can be found; and unless such an institution be established here, it is certain that the objects for which the new Medical College was founded, must fail of being attained.

J. R. MARTIN.

Native Hospital, Calcutta. April 29, 1837.

No. 39.

DR. J. R. MARTIN.

1st May, 1837.

No. 39.

Dr. J. R. Martin,
1st May, 1837.

Having been called upon by the Committee of the Fever Hospital to give my opinion on the Report of the Council of the Medical College, I beg to state as follows.—

1st. That in the first letter, dated April 9th 1835, submitted by me to the Governors of the Native Hospital on the subject of establishing an Institution for the cure of the acute diseases of this city, I urged the expediency of making the said Institution one of easy access to the Students of the Medical College, on the plea, that “it is in an Hospital alone they can ever acquire the practical knowledge which can render them generally useful,” &c. To this, I need only add my present conviction of the absolute necessity of such an arrangement, towards the completion of the objects for which the Medical College was founded.

* Original letter submitting the proposition for a Fever Hospital and City Improvements, dated 9th April, 1835.

2d. That were I to point out the site I consider most eligible, on account of its elevation, aspect and exposure, convenience, and suitableness to native prejudices, access to water, &c., that site should be the river-bank; but if we are not in condition to choose in this matter, I would recommend the vicinity of the Medical College provided a sufficiency of ground for an Hospital, tanks, and shaded walks, be procurable.

3d. That the nature of the Police Hospital, as described in the report, renders it absolutely necessary, the new institution be altogether separate from it, so as the two may not by any possibility be mixed together, even in idea, by the natives, and lest the character of the new Hospital be thus disparaged or mistaken by them.

4th. That if I rightly understand the latter part of the report, it is proposed to furnish the medical aid of the new Hospital gratuitously. To this I would object. I think, at the same time, that every reason is in favor of the proposed institutions being placed under the management of the professors of the Medical College and no one, that I know of, against such an arrangement.

J. R. MARTIN.

Native Hospital, Calcutta, April 29, 1837.

No. 40.

Dr. D. Stewart,
1st May, 1837.

No. 40.

DR. D. STEWART.

1st May, 1837.

Reply on the question of the relative advantages of Dispensaries and Hospitals.

1st. I think that I have on a former occasion submitted an opinion on this subject, founded upon observation of the totally distinct though allied uses and objects of both Institutions. Dispensaries such as those of Calcutta provide merely for the *alleviation* of disease, very imperfectly for the *study* of disease, and not at all for the *treatment* of disease in the acute forms peculiar to the Climate—while Hospitals in addition to these important objects superadd the higher aim of preventing the *diffusion* of disease among the healthy: and are allowed to be the only schools where disease in all its *varieties* can be duly studied, and the habit acquired of correctly *observing and recording* its phenomena, and the *effects* of remedies.

2d. In the latter view and as an essential part of Medical education, nothing in my opinion can supersede the multiplied advantages of an Hospital, since there alone, as the term itself implies, can *Clinical* instruction be given with propriety. On the proposed site of the new Hospital, and the appointment of Medical Students as Clinical Clerks, Dressers and Apothecaries.

1st. The situation offers many advantages the principal of which is its proximity to the native part of the town, as well as to the College.

2d. The employment of the College youths in the departments named will give them an interest in their profession and a practical knowledge of it—not possible to obtain otherwise. These situations might be made objects of reward, and of competition among them, being held as in the Edinburgh Infirmary, only for six or twelve months at a time.

D. STEWART, *Assistant Surgeon.*

No. 41.

1st May, 1837.

No. 41.

Radhamadhub B.
erjee,
1st May, 1837.

RADHAMADHUB BONERJEE, *examined.*

Q. 1. From your knowledge of the native feeling, prejudices, &c., do you think they would object to the junction of the College and Hospital—there being dissection in the College?—*A.* No. I think not; if walled round and separated there would be no objection; they ought not to be in the same compound.

Q. 2. Do you think the poorer classes would have any difficulty in substituting mud huts with tiles for the straw and mat huts now used?—*A.* No, it would be done by landlords.

Q. 3. Would it increase the expense?—*A.* Yes, but the lower classes would be willing to pay the difference.

Q. 4. Do you think they have any objection on the score of health?—*A.* No, they do not regard the heat, they make tiled houses whenever they can afford it.

Q. 5. Are not many of the lower classes themselves the owners of the houses?—*A.* Yes, but the landlords will advance. If not they can plaster the mats, which is done at a very small expense.

Q. 6. What is the difference of expense?—*A.* A straw hut will cost 12 Rupees, a tiled hut about 15. The best kind of straw (Ooloo) is nearly as dear as tiles.

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Dr. H. H. Goodeve,
May 8, 1837.

No. 42.

May 8, 1837.

DR. H. H. GOODEVE, *examined.*

Q. 1. With reference to your proposal as to the union of the Fever Hospital with the Medical College the Government have referred Mr. Hare's letter to us to enquire whether the proposed Hospital can be established near the College, have you examined the ground and brought any plan?—*A.* Yes, I have examined the ground and brought a plan made by Captain Fitzgerald for buildings capable of accommodating 500 patients. There should be three buildings with six wards to each, for different classes of patients, viz. one for the superior class, another for the lower class, and the third for women. Each building to be 60 feet by 100, and each ward 60 by 35, all pukka and two stories—they will cost about 60,000 Rupees—they may be built for 50,000, with the materials of the present Police Hospital belonging to Government. I would make no enlargement on the sides, but build upon the top *(a rough plan delivered, which after inspection was returned with a request to send in a correct plan of the ground and estimate.)*

Q. 2. It has been suggested that the vicinity of the Medical College would be disliked by the natives, what is your opinion in that respect, and what means have you of overcoming native prejudices?—*A.* I have made great many inquiries and I do not think the natives will have any objection provided the Hospital is separated from the College by a wall, a sufficient dividing wall should be built to prevent access.

Q. 3. Will Captain Fitzgerald give a figured estimate, as your statement is too general and loose?—*A.* He is to give one to the Professors. As soon as he does so, I shall be able to send it; it will take some little time. The statement I have given above is merely from a rough calculation of his; *(the Secretary to the General Committee was desired to write to Captain Fitzgerald for an estimate.)*

Q. 4. Without a Hospital there will be no benefit to the College?—*A.* There can be no doubt that the College is comparatively useless without it.

Q. 5. What are the difficulties as to the Clinical instructions now?—*A.* The want of Clinical patients in the neighbourhood. The Hospitals are too far and would cause a neglect of other duties in the College.

Q. 6. What other difficulties are there?—*A.* I see none; if we had a Hospital in the neighbourhood, we are prepared to give Clinical instruction, as there is a Clinical Professor: *(Answer by Dr. O'Shaughnessy)* there might be a difficulty for a Professor lecturing in a Hospital to which he was not attached.

Q. 7. It is supposed that the patient would have no objection?—*A.* The lower orders would have none.

Q. 8. Is it only the lower orders that would come to the Hospital?—*A.* There are a great number of natives of higher caste, poor.

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Dr. H. H. Goodeve,
May 8, 1837.

Q. 9. The Police Hospital does not afford subjects for Clinical lectures?—*A.* No.

Q. 10. What are the number of patients in the Police Hospital?—*A.* Eighty to one hundred.

Q. 11. When do you think Captain Fitzgerald would be able to send the Estimate?—*A.* In about a week.

Q. 12. There is no question that the junction would be beneficial to the College?—*A.* No question whatever.

Q. 13. Have you made any Estimate of other expenses attendant on the Hospital, in setting it going?—*A.* Yes. It appears to me that it would not cost less than one thousand rupees per month for two hundred patients, calculating diet at two annas per day. I will send in a detailed Estimate for two hundred patients.

Q. 14. Do you include the salaries?—*A.* This will include the salary of the resident Surgeon, no other expenses I have reckoned. We have offered to give Clinical instruction, the Professors would give their services gratis.

Q. 15. Will you be so good as to put on paper the exact position of your plan as you have worked out in your Estimates, and send it to the Committee?—*A.* Yes, I will do so.

Q. 16. What is your opinion as to the utility of Dispensaries as compared with an Hospital? How are the poor to be relieved—in which way is the Medical relief to be afforded?—*A.* Generally I would say an Hospital is far more useful and desirable in this country than Dispensaries, because in the latter you lose sight of your patients. In Dispensaries you may give Medicine to 500 patients, but you do not know whether they take it or attend to the directions given to them as to food, time of taking Medicine, &c. &c. all of which is watched in an Hospital, and severe acute cases cannot be treated at all. In Calcutta, Dispensaries afford little relief except in Surgical cases. Dispensaries in England are very useful: (*Answer by Dr. O'Shaughnessy*) but have never superseded Hospitals.

Q. 17. Do you think Dispensaries more useful in Europe—in Ireland for instance?—*A.* Yes, a very different class of patients attends there: (*Dr. O.*) it would be impossible to attend severe acute cases from a Dispensary.

Q. 18. The two great questions are whether greater relief is afforded by Dispensaries or Hospitals and the advantage of Clinical lectures for the instruction to young Medical men. Your College is not for Calcutta alone but for India, will you put your's and Dr. O'Shaughnessy's opinions on paper?—*A.* Yes, we will do so.

No. 43.

Ramcomul Sen,
May 8, 1837.

No. 43.

8th May, 1837.

RAMCOMUL SEN, *examined.*

Q. 1. The late fires in Calcutta have caused destruction of property to a considerable extent, and the Governor General has asked us to report upon the case. The Chief Magistrate seems to have some objection to compel the people by law to build huts with mud walls and tiled roofs instead of mat walls and straw roofs, what do you think is the difference of value between these two sorts of huts? —*A.* There are three different kinds of mud walled huts—the 1st, mud wall built from the foundation to the edge of the chopper, gradually sloping; this sort of wall cannot be erected in Calcutta, the soil is not suited for it. The 2d, *Chitta-berra*, made of Bamboo branches covered with mud. This is also objectionable here on account of the dampness of Calcutta being more than that of the Mofussil; 3d, Gurran sticks covered with cow dung and clay. This kind will answer the purpose better, last long and is not liable to fire. The difference of expense is comparatively small, the only difference is in the value of tiles. Formerly straw was very cheap, now it is very dear, and therefore the people in building huts use common straw called *Bechchally*, which lasts only twelve months; one difference is in making the frame, which for a tiled hut requires to be made stronger and closer. These sticks may be used and the tiles preserved for 30 or 40 years, so, though dearer at the beginning, they are cheaper in the end, but the difficulty is in finding ready money for the expense of building.

Q. 2. What is the expense?—*A.* It must depend upon the sort of hut erected. There are choppers from twelve annas to five rupees and ten rupees. The money is required to be laid out all at once. The better sort of huts require time to be built, the tiles cannot always be had here—they are imported from Barrackpore, &c.

Q. 3. What do you suppose is the difference of cost between the tiled and straw huts of the same dimensions?—*A.* The difference in the cost of straw and tiles. The difference between strong substantial straw huts and tiled huts, I should estimate at 50 per cent, i. e., if the one cost ten rupees the other will cost fifteen. The mats and sticks are spoilt in twelve months.

Q. 4. What is the feeling of the natives as to the preference for the sake of convenience, health, cleanliness, &c. I have they any prejudice?—*A.* They would have tiled huts if they could afford it, there is no objection in regard to filthiness, people living in such huts care little for dirt. I think they all prefer tiled huts; people who live in those huts are out the greater part of the day and do not regard the heat. They have no prejudice or feeling save the difference of expense. Straw huts properly thatched are cooler and keep out rain, cold and dust better than tiled ones, but being more liable to fire.

Q. 5. Then you think the expense is the sole preference?—A. Certainly, I think the tiled huts are gradually increasing; formerly there were three-fourths of the huts in town straw built, now there are more than half tiled.

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Q. 6. Do you know the proportions of the huts built by the landlords and the occupiers?—A. There are three classes; 1st, huts built by the proprietors of land; 2nd, land being rented by an individual he builds huts to be let; and 3d, the land being rented by the ryots at a small charge they build huts at their own expense; this class is the largest proportion, more than half. I would say two-thirds.

Q. 7. Then the expense of building in case of compulsory law would fall on the poorer classes?—A. Certainly it would fall upon the tenants, the poorer class and not upon the richer, and it would be considered a forcible measure.

Q. 8. Do you think the feelings of the natives would be opposed to such a law?—A. Not of those who could afford, they would build, the poorer part would leave Calcutta and go into the Suburbs, and elsewhere.

Q. 9. Would not the proprietors of land suffer a loss of rent then?—A. I think the loss would be temporary, they would return again and build in Calcutta when able to do it.

Q. 10. What do you think of the expediency of passing such a law?—A. I think it would be very hard upon poor people, who cannot afford the expenses, if such law is passed generally, but if partially, it will not be so, I mean where there may be pukka houses or a number of tiled houses, building of straw huts there may be prohibited.

Q. 11. Is not the evil complained of now, that pukka houses are destroyed by the neighbourhood of straw huts?—A. Yes, by the late fires more pukka houses are burnt than I have ever known before; I would not build a pukka house near such huts.

Q. 12. Would the poor go into the Suburbs because they could erect there huts cheaper, and would not that lead to the landlords building tiled houses?—A. Yes, they would go into the Suburbs because they could build at cheaper rates; if such law is established that proprietors may build tiled houses in the most populous part, such as the border of public roads, bazars, &c. and let to advantage; that in the Suburbs I do not think they would lay out money for building tiled houses, but only build straw huts, and it would only be removing the evil to the Suburbs.

Q. 13. We want to know whether the landlord would build tiled houses seeing the Ryots going out of his land?—A. I would not; if I have land, I would rather let it out to the ryots to build their own houses, than build upon it myself, as in case of proprietary buildings, the tenants have no interest in them and they frequently run away and the rent is lost.

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Q. 14. State your opinion as to the expediency of such a law?—*A.* It would be expedient to introduce a partial law dividing the Town into districts, and appointing Committees with discretionary power to decide whether straw huts may be built at a certain place or not, and that no man should build a hut without the authority of the District Committee, but if a general law is introduced to prohibit the erection of straw huts it will be very hard. In places where there are no pukka buildings the effect of such a law would be very hard, such as in Bamunbustee, and the ryots would leave the place.

Q. 15. Then you think a partial regulation would be expedient under Committees?—*A.* Yes, where prohibition with regard to situation and circumstance is inexpedient.

Q. 16. How should these Committees exercise their discretion?—*A.* The Committees are to act under the authority of the Police.

Q. 17. Won't that be inconvenient, and what are the Committees to do?—*A.* The Committees should act under the authority of Government where there are a number of tiled huts or pukka buildings, they will authorize no straw huts to be built there, nor in a direction likely to communicate or extend fire, should it break out. The Committees being residents would know their own interests and act accordingly.

Q. 18. Then your opinion is against the general compulsory law, but you would vest the discretion of prohibiting to committees of inhabitants?—*A.* Yes.

Q. 19. Do you know the amount of property destroyed by the late fires?—*A.* It is impossible to ascertain it, but I should think it is over stated in the papers. I have observed the property being removed on the alarm of fire, upon several occasions.

Q. 20. What do you estimate the average loss to a family?—*A.* I think each family must have lost 20 to 30 Rs.; no, that is too much, I think 10 Rs. the most, exclusive of the value of the huts.

Q. 21. There is a proposition before the Committee of District Charitable Society to raise money by subscription to relieve the sufferers by fire, suppose the Committee raise a large sum, do you think that if that money was properly distributed a compulsory law might be enacted?—*A.* I do not think the subscription will amount to such a sum, that you can afford relief to all to enable them to erect tiled huts.

Q. 22. Suppose the subscription is raised to the amount of 30,000 rupees?—*A.* I do not think it will be raised to that extent, that will enable you to give relief to the people to build tiled huts throughout Calcutta and the adjacent places, and unless the whole is tiled, I mean rebuilding those destroyed by fire, and changing the remaining straw huts for tiles, the safety and security of the former will be nominal, and the danger is not removed.

Q. 23. Supposing that difficulty is overcome would you agree to a compulsory law?—**A.** By no means. I think a compulsory law ought not to be enacted under any circumstances, because straw huts and temporary houses composed of combustible materials, are often erected even by rich people, which cannot be prevented.

Q. 24. Would tiled houses add to the insalubrity of the place?—**A.** Considerably, unless they are made sufficiently apart, having space for ventilation of air, and the mud requisite for their houses is supplied, they excavate holes which remain full of stagnated water, and gradually filled up by filth.

Q. 25. Then you think that without proper sewerage and drainage it would cause unhealthiness?—**A.** Yes, unless the cutting of the hole is prevented. Besides tiled houses are built so close together, that in many places a free circulation of air is often prevented.

Q. 26. Then perhaps fires are necessary to keep the town healthy?—**A.** If I am not mistaken the dampness with which the air is impregnated is destroyed, and the unhealthiness is in some degree removed by fire. My medical friend sitting before me (Dr. Jackson) will be able to give an opinion better than I can offer.

Q. 27. In Captain Birch's plan he proposes to Government to compel the landlords to lay out their ground, do you see any objection to that?—**A.** That depends on the value of the ground, the proposition cannot be carried into effect in all the divisions of the town. The huts must be built to the occupier's convenience; but unless something of this kind is done the town can never be beautified. I would be content to leave this to the Committees of inhabitants.

Q. 28. In the Committee of the District Charitable Society the sum raised is contemplated to be distributed in loans amongst the sufferers under the management of Native Committees, do you think they will be able to protect against fraud, &c.?—**A.** I do not think it safe to lend the money; you may make donations at once; there are some obstacles; there are people who are able to build tiled houses, but do not because they often change their habitations, and some are not stationary there, living in hired land, will not pay its rent, and the huts will go to the payment of the ground rent, so the loan will be lost.

Q. 29. That would perhaps induce them to have a fire next year, what part do you think of huts burnt would be made of tile by the people themselves?—**A.** About one-tenth.

Q. 30. It is proposed by the Council of the Medical College that there should be an union between that institution and the proposed Fever Hospital, is there any objection to that?—**A.** The proposed Hospital is intended for Hindus and the superior class of natives, and the arrangement must therefore be different from the ordinary rules of a public Hospital, I think it is very objectionable. The natives will have prejudices, if it is joined to the College.

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Q. 31. Suppose the Fever Hospital is separated from the College by a wall?
—**A.** There would be an objection still, the impression, that it was the site of the Police Hospital, will not be removed for a long time, the horror of dissection is great, and no man will allow himself to be an object for the instruction of the pupils of the College ; people will think it is not for the cure of the patients, but for the benefit of the pupils.

Q. 32. Then you think it would be inexpedient to unite the two Institutions ?
—**A.** I think the Hospital ought not to be united with any establishment of the kind ; it ought to be a distinct institution by itself. The natives would not like the body of students to come about them. People for whom it is intended would not like to go there. It is well known, that they would rather die in want of medical aid or lose the chance of recovery, than go to a public hospital where their feelings and prejudices are not attended.

Q. 33. Do you know that the natives like to be visited when sick by a crowd of visitors ?—**A.** They like their friends and relations to come, and one or two at a time.

Q. 34. How would you give scientific and practical knowledge to the students of the College ?—**A.** They have access to the Dispensaries, and the Police, Native and General Hospitals ; and they may visit the proposed establishment two or three at a time, to learn the practice, and after they have finished their collegiate studies, they may be attached to any of these establishments for a fixed time, and have practical knowledge, &c.

Q. 35. Does not this objection apply to the present Native Hospital ?—**A.** The present Native Hospital has patients mostly belonging to the lower class of natives, they are servants of Europeans, and sent by the Police ; they are helpless while in the Hospital, and are obliged to submit to one rule, I believe what is applicable to all, and therefore people do not go there so much as they would otherwise. If the practice and rules of the Native Hospital be fully introduced to the Fever Institution, I am afraid the object will fail ; my ideas are always for moderation. I do not like to be defeated when I can help it. The natives do not yet know nor understand an Hospital well, and whatever is done regarding it ought to be done with caution consulting their feelings.

No. 44.

Monday, 8th May, 1837.

MUTTYLOLL SEAL, *examined.*

No. 44.

Muttylooll Seal,
Monday, May 8, 1837.

Q. 1. You have heard Ramcomul Sen's evidence, do you agree in his estimate respecting the difference of expense for building a tiled and a straw hut?

—A. Yes, it is about fifty per cent.

Q. 2. What do you think of the propriety of passing a compulsory law?—

A. I think such law would be very hard upon the poor.

Q. 3. What do you think of it, with the modification of vesting a discretionary authority in a Committee to determine who shall build, and where, and who not and where not?—A. This would answer. There ought to be a Committee with discretionary power to allow the building; they should not allow straw huts to be built where there are a number of tiled huts, and in such a situation as would convey the fire by south wind to other buildings, and no straw huts should be allowed to be built near pukka buildings.

Q. 4. Who would compose the Committee?—A. Men of intelligence and respectability.

Q. 5. Would you join Europeans in the Committee?—A. It is unnecessary—but there is no harm to join them.

Q. 6. Do you think a sufficient number of wealthy and intelligent natives in the different divisions would form themselves into a Committee and take interest in the matter?—A. Yes, they would.

Q. 7. Have you any thing more to say about the huts?—A. I will send my opinion in writing—in general I agree with Ramcomul Sen—where I differ I will state it.

Q. 8. What do you think of placing the Fever Hospital near the Medical College, the Police Hospital being removed?—A. There will be no objection to it.

Q. 9. You do not agree with Ramcomul Sen in that point?—A. No, not at all, where can you find a better place.

Q. 10. Would the sick natives object to a Doctor of the College seeing them with three or four of his Hindu pupils?—A. No, not in the least.

Q. 11. Then they would have no objection to the Doctor giving lectures at their bedside?—A. Not the least. Those who would go to the Hospital will have no objection on these points, and for this objection they would never leave the Hospital.

Q. 12. Do you think they would not prefer seeing their countrymen attending on them?—A. Certainly, they would be very glad.

No. 45.

Baboo Radakissen
Bysack,
Monday, May 8, 1837.

No. 45.

Monday, May 8, 1837.

BABOO RADAKISSEN BYSACK, *examined.*

Q. 1. You have heard the evidence of Ramcomul Sen and Muttyloll Seal, what is your opinion respecting a compulsory law for building tiled huts instead of straw ones?—A. I think a general compulsory law would be unjust.

Q. 2. What do you think of a partial law as proposed by Ramcomul Sen?—A. Under the modified plan I think it would answer, that is, not allowing straw huts to be built near pukka buildings or near a number of tiled huts.

Q. 3. Would you impose any other restriction?—A. No other but a discretion to the Committee.

Q. 4. What do you think as to placing the proposed Fever Hospital near the Medical College?—A. Those who object to going to the Hospital will always object, but the others will not care.

Q. 5. Do not many natives object to taking European Medicine?—A. Yes.

No. 46.

Russomoy Dutt and
Dwarkanauth Tagore,
11th May, 1837.

No. 46.

11th May, 1837.

RUSSOMOY DUTT AND DWARKANAUTH TAGORE'S *Minute.*

1. It appears to us that it is absolutely necessary to adopt some measure to put a stop to the destruction of property and life by annual conflagrations. The late fires have destroyed considerable property and in many instances lives.

2. We think a legislative enactment either prohibiting, generally, the erection and existence of straw huts within the town, or vesting district committees of inhabitants with discretionary power to allow or refuse them at any place they may think proper, or imposing additional tax on straw huts, is the only remedy to remove the evil.

3. We do not think Captain Birch's proposition of laying out ground and building kutcha pukka dwellings would answer—such buildings can only be erected

at the expense of the landowners, but the capital required would be large, and there will be no adequate return by rent to meet the interest on the sum laid out.

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Russomoy Dutt and
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11th May, 1837.

4. We think huts walled with branch bamboos, covered with cowdung and clay, and roofed with tile, being less expensive and full proof against fire would answer better.

5. The expense of building such tiled huts will be about fifty per cent. higher than straw ones; but the former would be stronger and more durable, and therefore, though this additional expense would be incurred in the first instance, it may be cheaper, or the difference will not be great in the end, and moreover the burthen will not be much felt by the poorer class. The people who build upon their ground, and those who rent ground with a view of building huts thereon to be let to others for profit, would not feel much difficulty in raising the money. The proposed law would oblige the landlord generally to advance to the poor ryot, who rents a small piece of ground to build his own dwelling upon (as is the prevailing custom in most places) rather than allow him to quit, and the small increase of rent or interest will not be felt by the poor ryot.

6. The causes of fires we think are spontaneous ignition and carelessness—but certainly not incendiarism..

7. We think no effectual relief could be afforded to the poor class by the Government, charitable societies, or individuals, to enable them to build tiled huts, without the compulsory law we have noticed, as those that will not receive pecuniary assistance would still be at liberty to build any sort of hut they like, and more especially those who build upon their own ground, and this with the existing straw huts will at once frustrate the object of the relief.

8. The natives prefer the tiled hut (though it is not so comfortable in all respects as the straw hut) because they consider it a more decent habitation—and they would therefore make such building as soon as they can afford to do so—so there is a feeling in its favour.

9. From our own observations and from statements of people living in tiled huts, we cannot discover that they are more unhealthy than the straw huts, nor do we think that tiled huts would in any way increase the filthiness of the town. They should of course be built at proper distances from each other, and in more regular form or square. The hole which will be necessary to be cut for the clay would be soon filled up by the sweepings (dust) of the town, at the disposal of the Overseers of the Conservancy department.

10. We have observed a considerable increase of tiled huts within the last few years.

11. With reference to the 2nd paragraph, we think the proprietors of existing straw huts should be entitled to remuneration.

RUSSOMOY DUTT.

DWARKANAUTH TAGORE.

11th May, 1837.

No. 47 A.
—
Letter of Trade
Association,
15th May, 1837.

No. 47 A.
—
15th May, 1837.

TRADE ASSOCIATION ON MUNICIPAL GOVERNMENT.

To W. C. HURRY, Esq.

Secretary Municipal Committee.

SIR,

In accordance with the wish expressed in your letter of the 28th ultimo, that the Committee of the Trade Association should furnish your Committee with their suggestions, or a plan embracing the better regulation of the municipal affairs of Calcutta, I am authorised to state their unanimous opinion, that the present method of assessment and disbursement by Government of the municipal funds, cannot but be unsatisfactory to the assessed, so long as they have no voice in the election of the public officers who control the levying and the expenditure of those funds, especially intended for the comfort and the safety of the inhabitants and the salubrity of the City of Calcutta.

With a view to placing the Municipal affairs of Calcutta on a popular and satisfactory footing, the Committee of the Trade Association beg respectfully to suggest—

I.—That the Court of Quarter Sessions be called into active operation as a Court of Appeal, as well as for sanctioning the levying of the Assessment and the controlling of all Municipal affairs.

II.—That the Court consist of the Chief Magistrate as Chairman, and of all gentlemen holding His Majesty's Commission of the Peace as Members.

III.—That the Court of Requests be considered as a Municipal Court and its Commissioners elected by the householders annually—to be eligible for re-election.

IV.—That the Police of the City be entrusted to the Chief Magistrate, four Police Magistrates, and a Superintendent, as at present, but to be elected annually by the householders, and to be eligible for re-election.

V.—That the Conservancy of the City be entrusted to four Commissioners, to be similarly elected, with Magisterial powers and summary jurisdiction in all matters relating to Conservancy affairs—subject to appeal to the Court of Quarter Sessions.

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VI.—That the Assessment Funds, the Abkarree, the Lottery Fund, the surplus Fines levied at the Police and Court of Requests, and any other local and municipal funds, be placed under the management of the Police and Conservancy Departments, through the medium of a Town Receiver or Treasurer, subject only to the control of His Majesty's Justices in Court of Quarter Session assembled.

VII.—That a Charter of Incorporation be granted to the inhabitants of Calcutta, empowering them to elect their own Magistrates, Commissioners, Deputies and Assistants.

VIII.—That the City be divided into four divisions, subdivided into wards ; each division having an Alderman, (or Honorary Magistrate) a Police Magistrate, a Conservancy Commissioner, a Deputy Alderman and an Assistant Commissioner, with suitable establishments.

IX.—The Police Magistrates, the Conservancy Commissioners to be paid—the Aldermen, Deputies and Assistants to be honorary.

X.—The election of the Aldermen, Police Magistrates and Conservancy Commissioners, to be submitted for approval to the Governor General in Council, who should possess a veto ; which, if exercised, a new election should take place.

XI.—The above named officers to be elected by householders, paying a monthly rent of — Company's rupees, or upwards, or living in houses, their own property, of equal value.

XII.—That the Suburbs of Calcutta, from the lowest house in Garden Reach, to the highest house at Cossipore, two or three (or more) miles inland inclusive, be formed either into a separate Corporation—or be joined to Calcutta, by extending the boundaries. Garden Reach, Allipore, Entally and Cossipore, might each form a division, as in Calcutta, with Aldermen, Magistrates, Commissioners, and, if necessary, Deputies and Assistants as in the City. The Suburbs, to be subject, of course, to Assessment, which would cover the Conservancy and nightly watch ; but it would be necessary for the Government to grant allowances, to the Magistrates, if they were appointed and paid like the City Magistrates, but on lower salaries, say five hundred or six hundred per mensem.

If a plan founded on the above suggestions should be recommended by the Municipal Committee and approved by Government, the Committee of the Trade Association are prepared to enter more particularly into detail, as the subject has been frequently under their consideration ; but they are not 'desirous, at present, to obtrude further on the attention of the Municipal Committee, nor until they are called upon to do so.

The Committee of the Trade Association beg to express their conviction that no difficulty would be found in inducing inhabitants, of the middling class of society, for whom alone they speak, to exercise the liberties conferred on them of

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choosing their own Magistrates, Commissioners, &c. and of aspiring to such of the offices, whether honorary or paid, as they might be deemed eligible to fill.

I am requested to offer, personally, any further explanations of the sentiments of the Committee of the Trade Association, of which I am ex-officio Chairman, and to state that should evidence be further required, I can submit the names of persons qualified to afford the information desired.

I have the honor to be, Sir,

Your most obedient Servant,

(Signed) R. S. THOMSON,

Master, Calcutta Trade Association.

No. 47.
—
Muttu Loll Seal,
11th May, 1837.

No. 47.

11th May, 1837.

MUTTY LOLL SEAL.

The humble remarks and observations of Muttu Loll Seal on the subject of affording relief to the sufferers by the late disastrous and extensive fires in the various parts of the Town of Calcutta as well as on the mode of reconstructing their houses so as to prevent in a great measure (if total prevention be impracticable) the recurrence of similar calamities in future within the precincts of the Town of Calcutta.

1. It is highly inexpedient and dangerous that there should be thatched huts within the town, and that in order to obviate the frequent annual occurrence of conflagration, it is essentially indispensable that the habitations of the poorer portion of the inhabitants should be invariably constructed with less ignitable materials than they appear hitherto to have been built of, namely, with mud walls and tiled roofs, but as a sufficient quantity of earth cannot be available in Calcutta without considerable expense, labour and difficulty, I would beg to suggest that wattle and dab may be used, prepared with clay and cowdung and a little entire earth; but in cases where the latter article could be obtained in abundance the walls ought to be wholly erected of that substance; it strikes me that were the Committee to exert themselves in contriving vehicles of cheap conveyance, clay could be transported in large quantities from the Suburbs at a much comparatively diminished expense.

2. I think the construction of a house in the mode above suggested would cost fifty per cent. over and above the amount which would be expended in building a thatched one.

3. That proprietors of lands find it very inconvenient to take upon themselves the burthen of erecting tiled houses upon their tenanted grounds on the plan pointed out in the first paragraph, at their own cost, because the expense which must necessarily be incurred in the erection and repairing of such houses could not be reimbursed by the rents which they would yield, besides which the proprietors have another serious objection to the incurring of this additional expense, viz. the insecurity of rents which must thereby result from the tenants having no proprietary right in the materials of their habitations, which they may quit at any time without paying the arrears of rent due by them to their landlords, thus entailing on the latter an inevitable loss of many months rent, which the proprietors could not recover without subjecting themselves to further expenses and considerable trouble and vexation, whereas by the present system they are wholly exempted from all this, as they have now sufficient security in the huts which have been erected at the cost of the tenants. Independent of the above reasons many of the landholders do not possess the means for such outlay.

4. There are still in the various quarters of the town both thatched and tiled huts, and in some parts the proportion of the former is much greater than that of the latter. It is therefore highly desirable that the whole of these should have tiled roofs and wattle and dab walls as above.

5. That landowners ought on the re-construction of burnt huts to leave sufficient open space for the convenience of the passage of the tenantry, as well as for the purpose of preventing the accumulation of dirt in their habitations, which will not only tend to the more comfortable ingress and egress of the tenants, but be conducive to their health. It is expedient that the landowners should be restrained from demanding of their tenantry any pecuniary contribution for this necessary and humane accommodation of their tenants. The length and breadth of this open space may be determined by the Committee with due reference to local circumstances.

6. In my humble opinion it would be an act of justice and benevolence that the really poor and destitute tenants should be exempted from the obligation of re-building their habitations at their own cost, which their present unprecedented forlorn condition would not admit of; under such circumstances the requisite means ought to be supplied either by the Government, or from the Subscription Funds as it may be deemed most expedient and equitable by the Committee.

7. The solvent tenants ought not to be allowed to draw from the Subscription Funds the means of re-building their abodes, as they are fully able to bear the expense from their own resources. In order to be able to draw an accurate and just line of distinction between the really needy and destitute tenants and those who are not so, it is necessary that the Committee should empower the members in whose neighbourhood they may appear to have been domiciled to institute the necessary scrutiny on this head, and I am sure no imposition could then be practised successfully or remain undetected.

No. 47.

Mutty Loll Seal,
11th May, 1837.

8. That a legislative enactment be passed preventing all parties, whether owners of land or tenants, from erecting huts of mats with thatched roofs within the limits of Calcutta, and that the Inspectors appointed by the Committee inform themselves as to the parties re-building being able to defray the expense between mats and thatched roofs, and wattle and dab and tiled roofs, assisting such as are not able from a fund, provided either by Government or private subscription, or both, that the same may be applied to all mat huts with thatched roofs notwithstanding, which ought to be altered in the mode recommended above as soon as possible.

9. I think the opinion that all tiled houses are more unhealthy than thatched ones is founded in gross error, and I am borne out in this allegation by positive facts, viz. that I have witnessed and still am witnessing hundreds of individuals living in tiled houses for years and years in the immediate vicinity of my residence, but I do not remember upon any occasion to have observed a greater degree of sickness prevailing amongst them than among the inmates of thatched houses.

10. I do not consider it expedient that pecuniary loans should be made to the needy and destitute sufferers either by Government or from the Subscription Funds, the reason of my discouraging such loans arises from a conviction that they could never at any time be recoverable from the parties, for people of this class generally maintain themselves and their families with great difficulty and privation and are often nevertheless involved in debt; under these circumstances I would beg leave to recommend that the pecuniary accommodations be *given* to them rather in the shape of donations than loans.—Lastly, I should wish to suggest that in every neighbourhood two of its respectable native inhabitants and an European gentleman be selected and appointed Inspectors for the purpose of carrying into operation the resolutions of the Committee, touching the future mode of constructing tiled houses in every part of the town.

MUTTY LOLL SEAL.

Calcutta, 10th May, 1837.

No. 48.

18th May, 1837.

No. 48.

C. K. Robison, Esq.
18th May, 1837.

C. K. ROBISON, Esq. *examined.*

Q. 1. You are perhaps aware that this Committee is enquiring into the present mode of levying, collecting and appropriating the House and Abkaree Tax. In looking over the items of the Establishments of the Division Magistrates' Offices, there appears to be a difference in amount, in each Office, Mr. Blaquiére's and Mr. McMahon's are larger than the other two, can you state how that arises?—**A.** I do not know this to be the fact, but when the former Department system of the Police was changed into the present Division system, the native establishments were not interfered with as affected salaries, and on certain writers being allotted to each Division Magistrate, those with highest salaries may have gone to Mr. Blaquiére as Senior Magistrate. There was no intentional difference, but the salaries of old servants could not be altered. Vacancies have in some cases, as I learn, been since filled up with persons at lower salaries. The situation of the Interpreter of the 4th Division lately becoming vacant, a Mr. Crow was appointed by Mr. McMahon at rupees one hundred and fifty per month, the former salary was Company's Rupees two hundred and sixty-one and four annas.

Q. 2. What is your opinion as to the diminution of the number of Magistrates?—**A.** I have always said that Calcutta should be divided into three Divisions instead of four, I have given an opinion already to Government that three districts or wards would be sufficient, and that opinion is still unchanged.

Q. 3. Do you include a River Police in that?—**A.** I stated to the Police Committee in 1829 and I am still strongly impressed with the belief that it would be a great convenience to have a separate Magistrate for the shipping, with jurisdiction on both banks of the river—(separate jurisdictions would prevent the detection of plunderers,) and I think the River Magistrate should have extended summary power, have a separate office near the river, and he should be always in attendance there. I am of this opinion from a knowledge of the great loss sustained by owners and masters of ships, from any delay in the decision of their cases; leading to abandonment of prosecution, and consequent escape of the most determined offenders—all Lighters or Bhurs should be registered and numbered.

Q. 4. In your estimate of three Divisions do you include the River Police?—**A.** Yes, I committed my sentiments upon the Resolutions of Government, which embrace this subject in the shape of a Minute to the Chief Magistrate in December 1830, and in a letter to Mr. Secretary Mangles of 30th July 1836—(*the above papers delivered.*)

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C. K. Robison, Esq.
11th May, 1837.

Q. 5. Do you think that three Divisions would be sufficient, including the River Police?—*A.* I am inclined to adhere to the opinion before given, that the River Police should be separate. I would have a fourth Magistrate, but I do not think that the whole expense of this establishment should be defrayed out of the House Tax, to which the shipping does not contribute in any fair proportion.

Q. 6. Do you think that the town may be divided into two Divisions under two Magistrates, the third being employed in the duties of the River Police?—*A.* I think the whole duties of the Land Police could not be performed by two Magistrates in case of sickness of one of them. With three, I think the absence of one occasionally would not interrupt duties.

Q. 7. Some of the Magistrates employ their time in other occupations?—*A.* This has been the system. The Magistrates should have sufficient salaries, without holding other offices, and be always at their posts—there are now five Magistrates and there were seven formerly.

Q. 8. But they are not there. Mr. Blaquiere, Mr. O'Hanlon and Mr. McMahon have other occupations, if you can dispense with the attendance of those, why cannot you reduce the number. If one Magistrate were to attend daily from 11 to 4 and another in case of emergency would not that be sufficient?—*A.* That has been the system. I can only say that not above half my time, while I am in the Police Office, is required for the business brought before me *according to the present system*, and I can always do the duty of other Magistrates when asked.

Q. 9. Why then will not fewer Magistrates suffice?—*A.* Because the River Police has in my opinion been always neglected, and a separate Magistrate ought to devote his whole time to it.

Q. 10. Then in the present mode of conducting business the number must be unnecessary, could you not with your present experience do the whole duty?—*A.* No, it is impossible—more than six hours daily cannot be given to labour in the office, and that would not get through the business. The writing alone is laborious, nobody else can do that for you. Depositions are written by the Magistrate, as well in the cases which he decides summarily, as in those he refers to the Criminal Sessions. The chief thing I am puzzled about is the River Police; when I was in the second Division there came more Land cases before me than before any other Division Magistrate, still that did not burthen me although the whole of the River cases, including Admiralty, also came before me, but I had no Superintendence of the River Police, and the cases were most unsatisfactorily disposed of. I endeavoured to get through it, but found it impossible to do it well, and for that reason I recommend the whole of the River Police being put under a separate Magistrate. The loss to trade from plundering is very great.

Q. 11. Would not two efficient Magistrates adequately remunerated be sufficient for the business of the town, three being now occasionally away?—*A.* It is difficult to give an answer to this. I do not know whether I should be required to confine myself to the present law or go beyond it; if confined to act according to

the present law, I should say two Magistrates would be sufficient for the town, with a third one for the River, but if our duties are increased according to the proposed law now framing by the Legislative Council, it is impossible to do the duties with the number mentioned.

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Q. 12. We are only speaking of the things as they are?—A. But at present I am directed not to execute the powers given me by Acts of Parliament, and am expected to act in constant violation of the law; I trust that is not to continue; in truth, 11-12ths of what I now do is illegal. I never however join in legalising the assessment, as the disbursement is taken out of my hands, and I ought not to be responsible for the expenditure of others. In mentioning three districts I included the River Police, but that would require the whole time of an efficient Magistrate.

Q. 13. Then two for the town would be sufficient?—A. Two would accomplish it, but in case of sickness or absence of one of them, the other could not get through the business; I am leaving out the Chief Magistrate.

Q. 14. We are supposing that there should be no Chief Magistrate, and then if the Magistrates are relieved from the assessment collection and disbursement and that they have only to decide judicially on such cases as may come before them, could they not get through the business?—A. I should not be afraid to undertake one-half of it myself, but I know that this is contrary to the opinion of others, still I must admit that not above half of my own time is occupied at present, and that I could do double the work with greater satisfaction to myself.

Q. 15. Do you think that any part of the expenses of the Magistrate's Office could be materially reduced?—A. Not without public inconvenience, there are many papers to be made out and registered.

Q. 16. Mr. McFarlan has stated that they could be reduced (read Mr. McFarlan's evidence)?—A. I think nothing could be so mischievous as uniting the offices of interpreter and clerk, the interpreter has every thing in his power if venal; I should have no confidence in such an interpreter. The interpreter ought not to enter the place or know any thing about the causes before the trial commences. The clerk has to advise and assist parties from the beginning, and carry into execution all the orders of the Magistrate.

Q. 17. Then such a reduction as Mr. McFarlan proposes could not take place with propriety?—A. No, I would rather try to write every thing myself than trust it in such hands.

Q. 18. What occasion is there for three writers besides a clerk and interpreter, and what would you give the clerk?—A. I think less than one hundred rupees would not insure the integrity of the clerk. One hundred and fifty rupees is an inadequate remuneration to an interpreter; you could not get an efficient one for that sum. I could dispense with one Bengalee writer Goluck. If there were fewer divisions, there would be fewer people required.

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Q. 19. What do you think an adequate salary for an interpreter?—A. Not less than two hundred and fifty rupees per mensem.

Q. 20. That would increase your Office Establishment to rupees four hundred and ninety-eight?—A. Yes, at all events I could not reduce my present Establishment which I think is necessary.

Q. 21. Have you any opinion as to the native force under the Police as to its being too large or small ; it is stated by Mr. McFarlan to be one thousand nine hundred and sixty men?—A. I can form no opinion thereon, it does not come within my knowledge.

Q. 22. Have you any opinion, if the Conservancy Department were taken from the Chief Magistrate, how the duties could best be performed, either under the present law or with some new enactment?—A. If the public could be prevailed upon to lend their hearty co-operation and assistance, I think it could be done much cheaper than at present. Contracts would be preferable to high salaried executive Officers.

Q. 23. Has any plan occurred to you for doing this?—A. I am not prepared with any plan, but if it be wished, I will commit my sentiments to paper and send in a minute on the subject. It has never yet been left to the Magistrates to show how they could manage the assessment, I am prevented from interfering though I have the responsibility. It has been in the hands of the Chief Magistrate, in fact, in the hands of Government, and the funds pass through the Treasury. My mind leads to Municipal management.

Q. 24. You were in the Court of Requests, we believe, what number of cases did you decide there in a month?—A. The Commissioners have disposed of four thousand cases in a month.

Q. 25. Do you think it would be judicious to unite the Court of Requests to the Police. Mr. Gordon thinks that the union would be advantageous?—A. I think it would be an advantage to join the Court of Requests to the Police—much hardship is sustained from the want of this double power. In cases which the Magistrates think cognisable by the Court of Requests, the people applying to the Police are refused redress, without any possibility of explaining the reason, and they give up the hope of obtaining it elsewhere.

Q. 26. Can you give any general suggestion as to the improvement of the Police?—A. I have not thought of it very lately, my letter to Mr. Mangles contains my sentiments on many parts of the past and present system, and I can add to these if it be desired.

No. 49.

No. 49.

C. K. Robison, Esq.
18th May, 1837.

18th May, 1837.

From C. K. ROBISON, Esq.

To ROSS DONELLY MANGLES, Esq.

Secretary to Government of Bengal,

Judicial Department.

SIR,

I have lately procured copies of your letters to Mr. McFarlan, of 9th June, 1835, and of 24th May, 1836, together with Extracts (paragraphs 17 and 18) from the Police Report of the Chief Magistrate for 1835.

It would be most unpleasant to me, after a recent correspondence, to explain the delay which has taken place in offering my sentiments on certain portions of the letter of 9th June, 1835, and I therefore hope to be excused for proceeding at once to the points on which my sentiments are asked by Government.

For the sake of distinctness I shall repeat, on the margin, the several queries which I consider as referred to me, and offer such opinions on these as I have been able to form.

“ How far the system established “ by the Resolutions of 12th October “ 1830, and which has had a trial of “ four years, has been found practi- “ cally superior to that which it super- “ seded?”	It is out of my power to offer any satisfactory comparison between the two systems, for when I joined the Police Office in January 1827, I was specially directed by Government to confine myself to what was then called the Felony De-
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partment, in which I had to investigate such crimes, offences, and misdemeanors, as were referred to me, for this purpose, from the Report Department, at the head of which was Mr. Blaquiere, or were preferred before myself in the first instance, by the complainants themselves, I had no interference with the machinery of the Police or the Reports of its Officers; the whole watch and ward of the City being under the exclusive controul of Mr. Blaquiere, and many important cases, investigated in the Police Office, came to my knowledge only through the public papers.

Such an order of things appeared to me, at that time, to be highly inexpedient, as it seemed impossible for one man, however great his talents and fitness for the task, to superintend efficiently a population so large and scattered as of this City; and this system, as it appeared to me, deprived the community of the efficient co-operation of four other Magistrates, who could have most advantageously shared the task with Mr. Blaquiere.

No. 49.

C. K. Robison, Esq.
18th May, 1837.

In October 1830, the Resolutions mentioned by you passed Council, and one of the most important provisions was doing away with the Report Department, and recommending a division of the City into districts or wards, with a Magistrate for each, who should receive all reports from the Thanadars, and dispose of every case within their respective wards. At the same time, a Military Officer was introduced into the system of Police, as Superintendent, and the Division Magistrates were relieved from all the duties of watch and ward, and directed to confine their attention to their judicial duties.

Notwithstanding this abrogation however, Captain Steel instituted a similar system of report every forenoon at his own house to the great retarding and detriment of business, and only such cases were afterwards brought by the Constables and Thanadars before the Division Magistrates as he directed. The same system has since been followed by Captain Birch, though in opposition to the opinions of the Magistrates, and the consequence has been that, in common with the other Division Magistrates, I am no better acquainted with the actual conduct of the Police Establishment than the four Magistrates in the Felony and Misdemeanor Departments were, when the whole was under the controul of Mr. Blaquiere.

I cannot however omit to mention that since 1830 great advantage has been derived from the extended sphere of Mr. McCann's employment; his talents, judgment, and activity merit every praise, and the conviction of my mind is, that had he been appointed Superintendent, that is, head inspector and instructor of the Constables, and the Thanadaree, instead of a Commissioned Officer, who has, in my opinion, overstepped the nature and intention of his appointment, great public advantage would have followed, and the exertions of the Division Magistrates would have been brought into the field, instead of being cramped from day to day, so as not to interfere with the Superintendent.

From what I have said it will be seen how incompetent I am to draw a correct comparison between the former and present systems, and how little I approve of either.

"Are crimes fewer, or less heinous?" I can only speak as to the crimes which have been committed within the division which I have myself had charge of, and without any assurance that all these have been reported to me, or rather indeed, under the conviction that they have not. My opinion however, on the whole is, that there has been no diminution either of crime, or of the heinousness of its character.

"Are the perpetrators more frequently apprehended, and if apprehended, more frequently punished, either by sentence of the Magistrates, or the Supreme Court?" I can only say in reply to this question that Mr. McCann's individual exertions, since 1830, have brought felons to condign punishment, who, in my opinion would have formerly escaped when the system excluded him from the same active interference, by reason of an erroneous prejudice against the services of Europeans; and I can most truly say, that in all

cases previous to 1830, in which I considered myself most successful it was in consequence of taking Mr. McCann into my confidence, and making him a principal instrument in the investigation.

No. 49.
C. K. Robbison, Esq.
19th May, 1837.

"Is more, or less, of the crime committed brought to the official knowledge of the Magistrates, or of the Superintendent of Police?" As both Captains Steel and Birch have taken all their reports at their private houses, I cannot speak as to what is submitted to them; but I have reason to know that many charges of crime are reported to the Superintendent, which are not afterwards brought before the Magistrates of Divisions, even although parties have been in custody under such charges; and that in consequence of such illegal constraint, and false imprisonment, Thanadars and other Officers of the Police have been afterwards complained against and punished.

"Are the benefits rendered to the community by the Police more or less alloyed by the abuse of the power necessarily intrusted to its Executive Officers?" I do not know exactly what construction to put upon the words "*necessarily intrusted*" in this query. Since 1830, the Police has become more a *gens d'armes* than a civil power, and I consider it, and the native community have regarded all its proceedings as conducted by Government, rather than as performed in conformity with the Law, or under the direction of the Magistrates, consequently parties aggrieved have been both ignorant how, and afraid to seek redress.

"Are Natives or Europeans found the best qualified to be the effective and unobjectionable executive Agents of Police in the city; and if some of the latter are indispensable, in what proportion, under what limits, and under what restrictions ought they to be employed?" It might be supposed that Europeans of the class from which Constables are selected, would be found both venal and incorrigibly dissipated, but this has not proved to be the case; and a much more respectable set of Constables has been always procurable than I would, without past experience, have expected. No instances have come to my knowledge of any of the Constables receiving a bribe to defeat the ends of justice, nor has more than one case occurred within my remembrance, in which any of them were tried for violent and oppressive conduct, and in that case they were acquitted by a Jury. Whereas, many cases both of venality and oppression have been brought home to the Native Officers of the Police.

My own experience would therefore lead me to employ Europeans more extensively than they are at present, provided they be nominated and sworn in according to Law, that they remain under the eye, the controul, and instruction of the Magistrates of Divisions, who with their head Clerk, ought always to reside each within his own respective ward; and thus not only have better opportunity of becoming intimately acquainted with all that passes in it, but afford to complainants the readiest access to redress. I am persuaded that the community would then be encouraged to go heart and hand with the Magistrates in preserving the peace of the city. At this moment, I believe the public feeling to be decidedly hostile to the Officers of Police.

No. 49.

C. K. Robison, Esq.
18th May, 1837.

Having replied, as shortly as I could, to the several questions put in your letter of 9th June 1835, I shall add a few observations upon Mr. McFarlan's plan of providing a field of occupation for the lately appointed Native Magistrates, apart from the regular duty of the Stipendiary Magistrates, and upon his proposal to do away with the present separate Conservancy Department, and devolve the duties upon the Magistrates of each Division.

It cannot be expected that these Native Magistrates will engage in any Police business which will seriously interfere with their private pursuits, and it therefore seems to me impossible to assign to them a separate duty; they are, besides, so ignorant at present of the Law, and of what they may be called upon to perform if sitting alone, and dare not omit to do, that I would consider it both dangerous and cruel to subject them to the risk. Whereas, if they sat along with the Magistrate of their own Division, when their leisure permitted, or when some important investigation rendered it advisable to ask their attendance, their knowledge of the customs, feelings and rules of conduct of the natives, might render their co-operation of the greatest advantage.

I have always been of opinion that the whole Conservancy duties ought to be performed by the Magistrates, each in his own Division, whereby a saving of establishment would not only be effected, but greater economy introduced in the performance of the work required. Here also I conceive the suggestions of the Native, to the Division Magistrates, would be valuable.

I have the honor to be,

Sir,

Your obedient Servant,

(Signed) C. K. ROBISON.

Police Office, 30th July, 1836.

No. 50.

No. 50.

C. K. Robison, Esq.
18th May, 1837.

18th May, 1837.

C. K. ROBISON, Esq.

Minute or Memorandum by C. K. Robison, Esq.—December, 1830, submitted to the Chief Magistrate.

By the "Resolution of Government" it seems to be their intention that the Chief Magistrate should, in communication with the other Magistrates, recommend a mode of dividing the duties of the town.

The former plan of dividing the Magistrates into Departments was condemned by the Police Committee, and is forbidden by these Resolutions. The only other method therefore, as it appears to me, is to divide the city into districts, and to give each of the Magistrates charge of a district; that is, to make it his duty to hear all complaints, and try all cases, within the district assigned him.

As the River Police, and cases occurring on the river or at sea have also to be provided for, it appears to me that if the town were divided into three districts, viz. the *South*, the *Middle*, (to include the River Police, and all Admiralty cases) and the *North*, all the objects of Government would be accomplished.

As Mr. Andrew resides in the South division, I would propose his doing the duties of it, and in the same manner that Mr. Blaquiere should do the duties of the North district.

As Mr. MacMahon and myself reside within the centre district, I would propose that we do the duties of that division jointly, he doing the land and I the River duties or business, alternately from the day of Jail delivery of each *Session term*, to that of the next one. By this arrangement the duty of all the Magistrates would be nearly balanced.

I would propose that Mr. Blaquiere and Mr. Andrew occupy the middle floor of the Office as at present, and that at ten o'clock of each day they meet in separate rooms, and hear complaints till twelve o'clock, when they should both meet in the centre hall, and there dispose of all judicial cases which require the presence of two Justices; that at two o'clock, or so soon as such business is over, they again return to their separate rooms, and proceed in the ministerial business of their respective wards.

That in like manner Mr. MacMahon and myself occupy the lower floor of the house, each having our separate room, and meeting together in the centre hall from twelve to two o'clock.

No. 50.

C. K. Robison, Esq.
18th May, 1837.

The exact time of two Magistrates sitting together would be regulated by the actual business before them, but generally speaking the above periods would be found to answer every purpose.

That the whole of the third story should be left for the Chief Magistrate, and for a *Committee room*.

I would appoint four of the Constables to the South District, one to be Head Constable, and the same number to the North Division. To the Centre Division I would give three Constables only, and all the Town Sergeants. In this way one Constable would be saved, and his salary would be divisible among the two proposed Head Constables of the South and North Districts.

I would make the South Division include all Chowringhee, Cullingah, Jaun Bazar, &c., and to extend from Birjtolao to Durrumtollah, including the South side of it, and also include the Fort, Esplanade and Cooly Bazar.

The Centre Division to extend from Durrumtollah including the North side of it, to Colootollah Street.

The North District would thus include the North side of Colootollah Street and extend to Chitpore Bridge.

Each District would include the Boundary Guard of its own extent of face along the Circular Road and River.

It would be necessary to prevent the duty of Thanahs from including a portion of two Districts. This could probably be easily arranged, by suppressing a couple of Thanahs along the two Streets of Durrumtollah and Colootollah, and giving a few of the men to any Thanah which might thus have an additional space to watch.

The Magistrate in each District would thus only have to do with, or have before him the Head Constable within it, who again would take his general instructions from Captain Steel, and see that the other Constables as well as Thanadars, Naibs and Chokidars did their duty.

By this arrangement a great many Christian and Native Writers, not only in the present Report but other departments, would be unnecessary.

I would propose that the District duties allotted to each Magistrate, and the place of his sitting in the Police Office, should be intimated to the public.

Fair Copy delivered to Mr. McFarlan ;

C. K. R.

27th December, 1830.

17th February, 1835.

Up to this day no notice has been taken by Mr. McFarlan of the foregoing minute ; nor were the Magistrates ever convened by him, or ever met to consider of a proper mode of carrying on the duties of the Police Office, which was the reason of my writing the minute.

No. 51.

18th May, 1837.

No. 51.

A St L. McMahon, Esq.
18th May, 1837.

A. St. L. McMAHON, Esq., *Examined.*

Q. 1. You are Comptroller and Examiner of Lottery drawings we believe?—

A. I am a Sub-Commissioner, but the time given to the duties of that appointment is principally out of office hours. The drawings, which are 16 in the year, occupy about an hour and a half of each day, and take place in the morning an hour before office hours, and sometimes earlier.

Q. 2. The expenses of your office exceed those of all other Divisions?—

A. That is accounted for by the Interpreter, Mr. Aviet, receiving a larger salary than any of the other Interpreters, viz. Rs. 261-4 per mensem, and although attached to my office, was a general Interpreter, and attended the other Magistrates when they required his services either in Persian or Armenian. I have now lost him, and have got in his place a Mr. Crow, on a salary of 150 Rupees a month.

Q. 3. Is Mr. Crow an efficient Interpreter?—A. I do not think him very efficient at present, but he may be so with a little experience.

Q. 4. Does he know Persian?—A. A little, I understand.

Q. 5. But you think he would eventually be a good Interpreter?—A. Previous to my appointing him, he was examined by Mr. Blaquiére, who was of opinion that he would make a good Interpreter with a little practice.

Q. 6. Is he of good connection?—A. I believe he is. He came strongly recommended, and produced testimonials of good character, &c. from Mr. C. Webb Smith, and the Heads of Departments under whom he had served.

Q. 7. Had you many applications when the office became vacant?—A. Not many.

Q. 8. You have four writers, are they all necessary?—A. I think I could manage with one less.

Q. 9. Are four Peons necessary?—A. I think so, two attend me at office and two at my own house and remain at night, formerly inconvenience was felt for the want of them, and I have frequently been obliged to employ my own servants on Police business.

Q. 10. Do you think three Magistrates would be sufficient to conduct the whole business of the Town and River, if their time were to be devoted entirely to those duties?—A. I hardly think they would. Business varies very much, at times there is not much to do, but at other times the Magistrates are inundated with cases—a good deal of time is taken up in reading and disposing of petitions. I speak of my own Division.

No. 51.

A St. L. McMahon, Esq.,
18th May, 1837.

Q. 11. How many cases do you decide daily upon an average?—*A.* I cannot exactly state, but I have furnished the Committee with a statement of the number of cases disposed of in the year.

Q. 12. Your return gives an average of five cases per day for the 225 working days in the year?—*A.* I should think there must be more. Many of the cases that come up one day and are partially heard, are postponed for the parties to subpoena their witnesses, in the meantime the parties make up matters and do not again appear. These are all put down as dismissed—parties not being in attendance, but still they take up time in the first hearing.

Q. 13. You think four Magistrates necessary?—*A.* Yes, I do. In this country you must calculate on occasional absence from sickness, &c., and I think the business could not be well got through with a fewer number.

Q. 14. Will you give us your opinion how the duties of the Conservancy Department may be best performed either under the present Law or with some new enactment?—*A.* I am of opinion that it would require the attention of two Magistrates to transact the duties of the Conservancy Department. I would also place under their controul the collection of the House tax, &c. I think there would be a considerable saving if much of the work (at present done by individuals in the Conservancy Department) was performed by contract.

No. 52.

Mr R. S. Thomson,
22d May, 1837.

No. 52.

22d May, 1837.

MR. R. S. THOMSON, *examined.*

Q. 1. In your letter of the 10th instant, you offer to furnish us with further explanation of the sentiments of the Committee of Trade Association and names of persons qualified to give evidence as to the better regulation of the Municipal affairs of Calcutta. Who are the persons willing to be examined and what are the sentiments of your Committee upon the subject? and what is the Municipal government you require, we want the details?—*A.* When I wrote the letter, the details were in a crude shape and in their present form the Committee of Trade Association are not prepared to submit them to your Committee. All the members of the Trade Association will assist if they are assured that the suggestions offered in my letter will be adopted. The groundwork is popular election of Magistrates. Nothing short of this will satisfy the inhabitants or incite them to take any interest in Municipal affairs.

Q. 2. In your letter you suggest that the Police Magistrates and Conservancy Commissioners should be distinct, and paid persons, and are to be elected by the tax payers, we want details of all these, for instance, what would be the rate of

payment for the privilege of voting which you have left blank?—A. The qualification for voting was left blank because we have not been able to agree on that point amongst ourselves in Committee, and it is one which requires consideration as well as investigation.

No. 52.
Mr. R. S. Thomson,
22d May, 1837.

Q. 3. We cannot recommend any measure to Government until we are satisfied upon all these particulars, nor would the Government come to any determination until those particulars are laid before them. Who are to be the electors?—A. I should say a person paying house rent of 16 or 20 rupees per month should be capable of voting. I could submit no specific proposition on the subject at present, but the minimum qualification for voting would be regulated by circumstances which can be better explained in detail.

Q. 4. There is the difficulty. Mr. Smith said the same thing—we have no data to go upon—we understood Mr. Hammerton has prepared some plan?—The subject has been frequently before the Trade Association, and although there seemed to be difficulties in the way it has not been lost sight of.

Q. 5. We wish to know what class of people are to be the voters, who are to be the common counsellors, &c. we are asking from you a plan of all these?—A. I shall be very happy to give a plan if time is allowed me for this purpose.

Q. 6. In the eighth proposition you say that the City should be divided into divisions and wards, each division to have an Alderman, Police Magistrate, &c. The first question would be what are to be the salaries of the paid functionaries, what establishment, what other expenses, we want to see all these in figures?—A. The Committee of the Trade Association did not think it necessary to go into all these particulars until they knew that their suggestions would be adopted, or such portion of them as met with the sanction and approval of Government.

Q. 7. If we do not see a proper plan laid before us, we cannot recommend the measure to Government, as we cannot go to them without a plan in detail. If you will not make an attempt, we apprehend the things must stand still as they are. The members of the Trade Association are almost all employed advantageously, their time is precious, will any of them devote their time to Municipal affairs?—A. I have no doubt they would. In all cities in Europe the inhabitants take a lively interest in Municipal affairs, and I would instance Edinburgh, where the Commissioners of Police are chosen from amongst the merchants, and who generally consider it a duty to devote a portion of their time for the good of the city.

Q. 8. The Government is desirous to place the Municipal affairs of the city in the hands of the inhabitants, but they will not do so until assured that it would work better by the change, and would wish to see calculations in detail before they come to any determination upon the matter?—A. I will propose to the Committee of the Trade Association to make calculations in detail and forward them without delay to your Committee.

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Mr R. S. Thomson,
22d May, 1837.

Q. 9. We want to see some specific proposition to enable us to come to a resolution whether to recommend it to Government or not?—A. Allow me to call the Committee and prepare a plan.

Q. 10. Will you be able to give us your plans and names of parties willing to assist soon?—A. It will take some little time (say a fortnight) to prepare the plan.

Q. 11. You will bear in mind that the voters must not be one class of people only. What would be the result of such popular election. The electors must be those paying the taxes?—A. I would give the vote to the occupier or tenant, there are many objections to its being exclusively confined to the landlord in this country.

No. 53.

Lt. W. Abercrombie,
22d May, 1837.

No. 53.

22d May, 1837.

LT. W. ABERCROMBIE, *examined*.

Q. 1. We believe you are the Superintendent of Roads, and Mr. Sevestre, the Executive Officer, acts under you?—A. Yes, Mr. Sevestre acts wholly under my superintendence. I cannot authorize the expenditure of money beyond twenty-five rupees without the sanction of the Chief Magistrate.

Q. 2. What are Mr. Sevestre's duties?—A. His duties are, building, repairing drains, and laying the materials on the road, under my superintendence.

Q. 3. Does he contract for these works?—A. No, the materials for the repairs of the road are supplied by contract by another man. He makes out his bills in conformity to estimates previously furnished for building drains, &c.

Q. 4. What is the name of the contractor of materials?—A. Radanath Mitter and Co.

Q. 5. And for the buildings, drains, &c. Mr. Sevestre supplies his own materials and workmen, and charges in conformity to the estimate previously furnished?—A. Yes, he works the same as any Executive Engineer, Captain Fitzgerald for instance, at estimated rates, &c. He works cheaper than any one else in Calcutta.

Q. 6. Does he make any profit by his work?—A. He is not supposed to make any profit by the work (on reading an extract of his former evidence, said) I believe he gets *dustoory*. It would be no saving in this country to abolish *dustoory*, because if the head of the department does not take it, his subordinates do. The Executive Officer acknowledges the receipt of *dustoory*, the Committee can

obtain from the Chief Magistrate a correspondence on the subject of his being required to take the oath formerly administered to Executive Engineers.

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Lt. W. Abercrombie,
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Q. 7. How are Mr. Sevestre's works checked and paid for?—A. I see the work before I pass his bills. There is no check except my superintendence.

Q. 8. Does Mr. Sevestre get a salary as Executive Officer?—A. Yes, of sicca rupees three hundred per month.

Q. 9. Could not the work be performed by contract on more favorable terms?—A. Contract would not be a saving, it would be more expensive. Mr. Sevestre works twenty-five per cent lower than the European builders would do it for. Mr. McFarlan sent his estimates to Burn and Co. or some other builders in Calcutta, who refused to undertake the work at 25 per cent advance.

Q. 10. Does Mr. Sevestre certify the expenditure as the Executive Officers of Government do?—A. He has refused to do so (vide Chief Magistrate's correspondence with Government and the Civil Auditor.)

Q. 11. Could you not undertake the duty yourself which would preclude the necessity of keeping up the expense of the establishment of the Executive Officer?—A. I of course consider myself capable of performing the duties of an Executive Engineer. I should however object to undertake them in Calcutta as Superintendent and Executive, unless I obtained full authority over my subordinates, who should receive orders from none but me; all orders from superior authority being conveyed through me.

Q. 12. Do you order what is to be done?—A. The origin nominally rests with the Chief Magistrate, I have suggested many works, &c. in Calcutta since my appointment. Every thing that has been done has received the sanction of the Chief Magistrate. The Executive Officer obeys my orders.

Q. 13. Do you think the Fire-Engine Establishment ought to be kept up?—A. Certainly, I think the Engine Establishment do their work particularly well as far as they go, but they are too few in number and have too few Engines, those they have are generally too large and very old.

Q. 14. Are the Engines kept up in good order?—A. Yes, they have no sucking hoses, the delivering hoses are kept pretty well, the apparatus require thorough repair.

Q. 15. Have you seen the operations of these Engines?—A. Yes, I have seen them frequently at work. I have stopt several fires with them, no Engine upon earth could stop the fires amongst straw huts aided by strong wind, until some assisting check applied, such as a tank, Pucca houses, or an open space. Aided by these checks, I have seen fires stopped by the engines, which had it not been for the engines would have overcome the obstacles and destroyed more property.

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Lt. W. Abercrombie,
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I once saw a very great quantity of valuable property preserved by the engines in a wood bazar.

Q. 16. What becomes of the sweepings of the Town?—A. The sweeping of the Town are generally used to fill up tanks, and carried away in the conservancy carts under the direction of the overseers.

Q. 17. Do they make any money by it?—A. They acknowledge that they make a little. I have no sufficient authority over the overseers and only hear casually where the sweepings are carried, unless I have given a particular order for them to be taken to some particular place. I am always liable to be told by the overseers that some Magistrate acting in the Conservancy department, has ordered them to such and such a place. The overseers usually fill places to which they can carry them, themselves, I do not believe they in general make much money by them. I once proposed compensation to be given to the overseers and the sweepings to be sold. I however had reason to doubt the efficacy of my own scheme. However, I would try it if I had my own way.

Q. 18. Are the Sircars and Peons in the Conservancy department to report nuisances necessary; cannot their duties be performed by the Thanadaree establishment?—A. They are not necessary. They are a greater nuisance themselves than the nuisances they report; their duties however, could not be performed by the Thanadaree establishment. I am making out a plan to reduce the number of the Sircars and raise their pay to thirty rupees.

Q. 19. Do not the Police assist the Conservancy?—A. No, not at present.

Q. 20. Would it not be convenient to unite the duties of the two departments?—A. I would unite in some instances.

Q. 21. There are twenty-four Khallasies charged for, under the four division overseers, for keeping the roads and drains clean. Are they necessary?—A. They are necessary; every officer who has experience in the employment of large bodies of native labourers will bear me out in saying, that a very large subordinate superintendence is required over them, they won't work without it, and if they would do that, they must have superintendence, whether the superintendents do their duty or not.

Q. 22. Do they attend to their duty?—A. They do as far as I am able to judge.

Q. 23. There are twelve Chowkedars charged under the head of executive department as employed in preventing nuisances in the Esplanade, cannot their duty be transferred to the Thanadaree establishment?—A. They are the Police, they report both to me and to Captain Birch; they are the Esplanade Police.

Q. 24. Have you any suggestions to offer generally on the establishment of an executive department. Could any reduction be made therein?—A. I have

sent in a report to Government on the establishment, recommending a permanent establishment instead of a hired one as at present, which if sanctioned will effect a considerable saving. My report is with the Military Board. I propose to improve the condition of the labourers, while I reduce them more under my controul. They are not under any controul at present; their allowance for one day may be cut, if more be attempted they will of course refuse to work, and on the other hand, if a lazy fellow be refused, the contractor immediately says that he cannot employ workmen if those he brings are rejected.

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Q. 25. The twelve Chowkeedars in the Esplanade, where are they stationed and under whom do they act?—A. They have a Thanna in Monohur Doss' Tank; they act under Mr. Statham, Esplanade overseer, and patrol the plain day and night.

No. 54.

22d May, 1837.

DR. W. GRAHAM.

No. 54.

Dr W. Graham,
22d May, 1837.

To WILLIAM C. HURRY, Esq.

Secretary Municipal Committee.

SIR,

After an attentive perusal of the accompanying letter addressed by the Secretary of the Medical College to Government, on the subject of a new Medical Hospital to be established in the Native Town, I am decidedly of opinion, from a long and intimate acquaintance with every corner thereof, that the locality of, or near to the Medical College, is by no means the place which ought to be selected.

If the welfare of the native population is the paramount object in contemplation, and I deprecate any other, the site of the institution should, and must be in the very heart of the town, and not at the southern extremity which the present plan proposes; and should such an establishment be eventually organized, I with great deference suggest the neighbourhood of Simlya, as being the most unexceptionable place, having a dense native population on every side.

If I may however venture to offer an opinion as to what I would deem the most humane and most beneficial assistance, which the Committee of Municipal Enquiry could render to this numerous class of fellow creatures, it would be the establishment of a Dispensary adjoining every Thannah within the limits of the city, with a comfortable receiving hut, containing a certain number of charpoy. Each establishment, to consist of two Native Doctors (Mussulman and Hindoo,) hereafter to be supplied from the Medical College: a cook and water carrier of

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Dr. W. Graham,
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each religion, with a constant supply of the requisite medicines and comforts, such a sago, arrow root, brandy, wine, &c. In times of great sickness, many would enter such an asylum as I have mentioned, in their own vicinity, and near to their friends, who would rather die than be removed to a distant hospital. The Thanadars would hear twice a day at the least, the state of sickness within their superintendence; those individuals who were able to walk to the Dispensary would be relieved, while others incapable of doing so from sudden and severe infliction of disease, such as cholera, could be seen and treated without any delay. The Dispensaries could be visited once or twice a day by Medical Practitioners at the Presidency, who doubtless would, under all circumstances considered, perform the duty with the same active benevolence as is exhibited by our brethren in Great Britain, who discharge it gratuitously.

I am, Sir,

Your obedient and faithful Servant,

WILLIAM GRAHAM, M. D.

Calcutta, May 11, 1837.

No. 55.

Dr. W. Raleigh,
22d May, 1837.

No. 55.

22d May, 1837.

DR. W. RALEIGH.

To WM. COBB HURRY, Esq.

Secretary to the Committee Municipal Enquiry,
&c. &c. &c.

SIR,

I have the honor to acknowledge the receipt of your letter of this date, with the accompanying recommendation of the Council of the Medical College for the establishment of an Hospital in the vicinity of the Medical School, as necessary to the Clinical instruction of the pupils of that establishment: How far existing institutions (the General, Native and Police Hospitals,) supply the required means for professional tuition, I am unprepared to say: but I fully concur in opinion with the Committee of Management of the Medical College, as to the convenience which would be afforded to the medical pupils, in the prosecution of their practical, medical and surgical studies, by the establishment of a General Hospital, in immediate connection with the College.

I have the honor to be, Sir,

Your obedient humble Servant,

WALTER RALEIGH,

*1st Assistant Surgeon, General Hospital.**11th May, 1837.*

No. 56.

22d May, 1837.

Dr. W. RALEIGH.

To CAPTAIN R. H. COCKERELL, R. N.

MY DEAR COCKERELL,

With reference to our late conversation on the subject, and in compliance with your desire, I forward you my opinion on the "comparative advantages likely to attend a Fever Hospital, or an increased number of Dispensaries in Calcutta;" and my suggestion for a Dispensary Establishment, calculated in my idea, to afford efficient and extensive benefit to the indigent native community, at a moderate expense.

In so doing I beg to remark, that as I have not seen any communications connected with the subject,* my observations are uninfluenced by any thing that may have been submitted to the Municipal Committee; and have probably been anticipated.

Hospital.—The advantages of an Hospital over a Dispensary may be briefly stated to be—the more satisfactory, and more certain opportunity of prosecuting medical treatment of the sick, and of ensuring those most important supports to the exertions of the medical practitioners; regulation of diet, cleanliness, and domestic attendance.

The objections to an Hospital are—the very limited benefit which could possibly be afforded by one hospital of moderate dimensions; the heavy expense necessarily attending the maintenance of such an institution; and the prejudices of the natives against going to an hospital for *Medical treatment*; for notwithstanding what may be urged to the contrary, daily experience convinces me, that however willing the natives are to resort to an hospital for surgical aid, which is usually beyond the province of the Native Doctors: they would be most reluctant to enter an hospital in case of fever or other medical diseases, which from their more obscure character, carry with them less intimidation, and are professedly manageable by the country practitioners of physic, besides which, the circumstance of being surrounded by their families, and having their wants supplied in their own accustomed manner, would ever induce the native, however poor, to prefer his own hut to an hospital, where certain restrictions are indispensable to good order.

Dispensaries.—The advantage of a Dispensary is, that at a comparatively trifling expenditure, a much greater number of sick may be relieved, than could be at an hospital of limited accommodation.

* The only paper I have seen, was a question as to the advantage of erecting an Hospital in connection with the Medical College, as a place of Clinical instruction to the pupils.

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Dr. W. Raleigh,
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The objections are—that by the *present manner of conducting Dispensary practice*, the aid afforded must necessarily be deficient in severe cases of sickness, and no command can be exercised over the patients in securing them from exposure or irregularities.

I cannot however but think, that a Dispensary establishment could be conducted on principles, calculated to afford extensive and efficient relief, and that too, in a way more consonant to the feelings and habits of the natives, than an hospital could be, and with much greater economy. This object appears to me easily obtainable, by extending the present Dispensary system, and in addition to the mere distribution of medicine at the depots, to those who are ~~unable~~ to walk thither for it, causing the more seriously sick to be visited at their own residence. To effect such measures, it would be necessary to establish a sort of Medical Police, and it occurs to me, that such an arrangement as the following would be found to answer the desired object.

1st. Divide the city into a certain number of districts: and at each district fix a Dispensary, with the following Establishment:

(1) One Apothecary	at 50 Rs a month.		
(5) Five Native Doctors, 10 each,	50	„	„
1 Bheestie, 1 Mater, 2 Coolies,	16	„	„
House Rent	20	„	„
Total.....	136		

The whole Establishment to be resident at or near the Dispensary, and available day and night to calls of immediate importance.

2d. During a certain number of hours of the day, say from 9 A. M. to 2 P. M., the Dispensaries should be open for general distribution of Medicine, to those enabled to attend there; at which time, the Apothecary and all, or as many of the Native Assistants as may be required, should be present to afford aid to applicants.

3d. During the morning and afternoon, before and after the hours specified for attendance at the Dispensary, (allowing time for meals, &c.), the Native Doctors should be occupied in visiting the seriously sick at their own houses, (within their particular district:) all such cases should be reported to the Apothecary, who in instances of emergency or danger, should himself visit the patient, and direct the Native Doctor in the treatment.

The controul and regulation of the Establishment should be vested in a certain number of Medical men, resident in Calcutta, forming a Committee, whose duty it should be to visit at regular periods, and superintend the line of Dispensaries.

Believe me, your's very truly,

May 15th, 1837.

WALTER RALEIGH.

P. S. Well instructed Native Doctors would be quite competent to the duty I have proposed for them, and would afford every satisfaction to the poorer classes of natives, even the higher orders, particularly the females, commonly employ them, excepting in extreme sickness.

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No. 57.

Drs. O'Shaughnessy
and Goodeve,
22d May, 1837.

Drs. O'SHAUGHNESSY AND GOODEVE.

Minute on the Establishment of Hospitals and Dispensaries in Calcutta.

In compliance with the request of the Municipal Committee, I beg leave to submit to their consideration the following memoranda relative to some of the arrangements proposed for the relief of the native sick in Calcutta, having been requested further to consider particularly the applicability of the Dispensary system to this object, I proceed in the first place to offer a few memoranda on that subject.

I wish at the commencement to offer a few remarks on various Dispensary systems which I have observed, having done this, we can more easily compare their advantages or disadvantages with those of other proposed establishments.

Dispensaries are of three kinds,—1st, those in which medical relief is afforded only to persons who themselves came to the dispensary—2nd, those in which the sick are visited in their own houses by the Medical officers of the establishment—3rd, those which in addition to the two previous systems have a few beds provided for the reception and treatment of patients.

The *first* of these kinds, that at this moment in existence in Park-Street and Guranhatta, is obviously only applicable to the treatment of persons laboring under such diseases or accidents as permit them to incur the fatigue of frequent visits, and is clearly useless as a mode of relief for cases of fever, dysentery, cholera, acute visceral inflammations, for fractures or dislocations of the lower extremities, and a host of similar surgical cases.

These Dispensaries consequently make no provision for the most urgent common maladies. They give much relief, it is true, in all the details of the surgery of minor accidents, in the treatment of syphilitic and cutaneous diseases and of some chronic affections.

Besides their inapplicability to the management of acute disease these institutions are moreover and as a necessary consequence, of proportionate inutility as sources of instruction.

Their expense is moreover great, as the subjoined estimate of the cost of the Guranhatta establishment will exemplify. But great, as is the expense, and the

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relief it affords, however disproportionate to the mass of suffering which needs assistance, still the quantum of good it *docs*, is certainly very well bestowed.

Estimate.—Guranhatta expenditure for one month—

1 Surgeon,.....	100
1 Apothecary or Head Assistant,	224
2 Dressers at 12 each,	24
2 Compounders at 5 each,	10
1 Peon,	5
1 Durwan,.....	4
1 Bheesty,	4
1 Sweeper,	4
House Rent,	100
Bazar Medicines, &c.,	90
Total Sicca Rupees.....	565

I would not however, recommend the establishment of more institutions of this kind because I think I can point out a cheaper and better mode of effecting the only object we all hold in view—the most effectual and economical relief to the native sick.

The *second* kind of Dispensary has been for many years established in Ireland, and more recently has been adopted in several large cities in England. I can speak of their organization and working from personal observation of several, especially those in the Southwark, Newington, Camberwell and Peckam districts of London. In these institutions a physician or surgeon attends daily at the general Dispensaries to prescribe for casual patients; this duty over, he visits at their own homes, the sick of his district, and he is obliged to attend lying-in women. For these duties which occupy his whole time and expose him to constant fatigue, he usually receives no salary, and in some cases a nominal reward of from 60 to 100.£ per annum.

There can be no doubt but this system works well, nay admirably, for the sick poor, but it is obvious that it could only be carried into effect under the peculiar circumstances of the medical profession in England.

The officers of these dispensaries are, with scarcely any exception young physicians of great accomplishments, but having no private practice, they devote themselves for two or three years to routine duties of this kind in order to introduce themselves to the public and to collect experience as practitioners. The paltry emolument of the office in no case does more than pay the expense of a vehicle, indeed, generally is insufficient for that expenditure.

Such dispensaries are altogether useless as sources of primary education, indeed no one is appointed to them who has not completed his professional studies,

were it otherwise, were they allotted to mere students destitute of previous clinical experience, they would be the sources of evil infinitely greater than the good they now accomplish.

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At present it would be quite impossible to establish these visiting Dispensaries in Calcutta. The older medical officers are too much occupied in practice, or other duties, to make them available, the junior officers are too few in number, and all moreover thoroughly occupied in peculiar duties. As to employment of the native students of the Medical College as visitors, I have no hesitation as one of their teachers, in stating my conviction that such a measure would be a calamity to the sick and fatal to the success of the College itself. These young men are still necessarily destitute of any knowledge of disease, and under the present imperfect provision for their clinical instruction, some years must elapse before they *ought* to be trusted with the care of a *single serious case*. I say this with some reluctance because it is an admission of the inutility and failure of our institution, unless its clinical arrangements be differently organized, an event which may possibly be indefinitely postponed.

But were we provided with a proper clinical hospital, where we could educate our pupils thoroughly in the principles and practice of the treatment of acute diseases and severe surgical maladies, I would then most earnestly recommend the establishment in Calcutta, and indeed in all large cities, of numerous Dispensaries of the Second Class. We could in two years hence provide them with trust-worthy native physicians and organize them so cheaply that they would accomplish infinite good.

The Guranhatta Dispensary now costs 565 rupees per month, exclusive of Medicine. The Dispensaries I allude to would each cost as follows—

Native Surgeon,	100
2 Compounders,	10
Rent,	40
Servants,	20
Bazar Medicines,	90'
	<hr/>
	260

I would willingly contract to supply Dispensaries of the most efficient kind at this rate, which is little more than the salary of the Apothecaries of the existing establishments. The third and last kind of Dispensaries has been but rarely tried in Europe, but it has always done much good. I attended one of the kind for two years in Dublin, and another, the Hospital of the Faculty of Medicine, for several months in Paris. The relief they afforded was great, but certainly unequal to that effected by the second kind. In both the cases I allude to, they were used, however, chiefly as subordinate clinical schools.

In Calcutta it would be, I think altogether inexpedient to adopt this system. In the first place, suppose six such Dispensaries, each with twelve beds were established in different localities, it is obvious that we must place them under European

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superintendence on the Guranhatta Dispensary system, if my statement of the incompetence of our present pupils be correct. The expense would consequently amount to 3,500 Rs. per month, and all this for the treatment of 72 acute cases, these cases again could not possibly be made available for the instruction of the pupils.

Let us contrast, then, this plan with that which I propose and compare them chiefly in their pecuniary details.

Expense of Clinical Hospital for 200 patients, with a Dispensary attached :—

Hospital and Dispensary,	Rs. 1,300
5 Dispensaries with Native Surgeons,	„ 1,300
	<hr/>
	Total Rs. 2,600

Being 900 rupees per month less than the Hospital Dispensaries taken with all their objections.

I am well aware that the third kind of Dispensary was proposed by the late Mr. Bramley, and the plan is consequently entitled to be treated with great attention and respect.

The vast importance of the question, however, justifies me in stating that one of the chief objects our lamented friend held in view, in recommending the adoption of these Dispensaries, was the provision of immediate employment for some of the pupils of the Medical College. It was too frequently represented to him from many quarters, that the school would be deserted, were not some situations of this kind speedily allotted to the pupils, and I believe, myself, that such a disposition existed at the time to a great extent. The pupils considered his influence quite sufficient to procure for them all they could desire, and with the natural impatience of young men, they daily urged on him the necessity of such a measure, but the death of our respected Principal has altogether altered the feelings of the pupils on this point. They are now satisfied with their condition and contented to depend on their own resources: they look on the future with anxiety it is true, but meanwhile they are perfectly prepared to follow up the probationary period and fit themselves for the duties which they will soon be called on to perform.

To sum up my opinions on this subject, I may observe, that a joint system of Hospitals and Dispensaries is requisite to fulfil the great object of relieving the sick, an object which embraces *essentially* the provision of an Hospital of instruction for native medical pupils, I would suggest then that the contemplated Hospital be made essentially a clinical school, organized as closely as possible according to the Edinburgh system and officered by the Professors of the Medical College, who have offered to discharge these duties without salary.

2. That the two Dispensaries now in existence be continued for two years from the opening of the clinical hospital, and then abolished, and that in their stead six Dispensaries be established in Calcutta and the Suburbs.

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Guranhatta, Park-Street, Kidderpore, Entally, Seabpore, Cossipore, &c. &c.

The control and supervision of these Dispensaries I would allot to the medical gentlemen now in charge of the Park-street and Guranhatta establishments.

The total expense of this scheme would be :—

Central and Clinical Hospital,	1,200
Six Dispensaries,	1,560
Superintendents,	200

Total Rupees..... 2,960*

From which deduct two Dispensaries abolished,..... 1,120

Total expense of one Hospital and six Dispensaries, Rs. 1,840

This arrangement would provide for the treatment of *acute* disease in Hospital and in the homes of the patients; would multiply threefold the means of relief to *chronic* cases; would ensure the due education of the pupils; provide them with respectable and sufficiently paid appointments, and would mean-while stimulate the present pupils of the school and attract others to the prosecution of such studies. It would lastly enable us to provide, in connection with the vaccine fund, efficient native surgeons for the mofussil cities in every one of which I would organize a Dispensary such as that I propose to establish in Calcutta.

WM. B. O'SHAUGHNESSY,

Professor of Chemistry and Medicine,

Medical College.

Calcutta, 13th May, 1837.

I fully agree in the opinions expressed by my colleague in the above paper. It is therefore unnecessary that I should offer any observations of my own upon the subject. I could add nothing of value to the excellent remarks Dr. O'Shaughnessy has made.

H. H. GOODEVE, M. D.

Professor of Anatomy and Medicine,

Medical College.

Calcutta, May 13, 1837.

* The Hospital has since this paper was written been estimated at 2,200 rupees per month, this will make the total expense of the Hospital and six Dispensaries, Rupees 1,940.

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Muttu Loll Seal,
22d May, 1837.

No. 58.

22d May, 1837.

MUTTY LOLL SEAL.

Observations on the Fever Hospital.

I approve of the continuance of the Fever Hospital on its present site and situation; all that I have to observe on this head is that the Police Hospital should be entirely separated from it, so that there may be no communication between the inmates of the one and those of the other.

It is highly desirable that there should be a separate and distinct entrance to these Hospitals respectively.

~~Should~~ the event of this separation taking place, and the friends and relatives of the patients of the Fever Hospital being permitted to visit them during their domiciliation in the Hospital, I am of opinion that Native patients would feel encouraged and become more willing to resort to the Institution and avail themselves of its benefits more extensively.

It would tend very much to the improvement of the knowledge and experience of the Medical students were they allowed to be present at the treatment of the fever cases by the European physicians.

Pursuant to the immemorial custom of my countrymen, the allowing of the friends and connexions of the patients to visit them during their confinement in the Hospital would have the salutary tendency of giving them good cheer and keeping up their spirits, whereas an exclusion of the indulgence would conduce materially to depress them, as the native practice and customs are diametrically opposed to those of Europeans.

Whilst on the subject of the Fever Hospital, I beg to suggest the propriety of some enactment for the prevention of one of the principal causes of fever in Calcutta.

It must have been observed by every observant person, that there are in Calcutta hundreds of filthy stagnant holes and small tanks, in which natives are in the habit of bathing, and this practice in conjunction with the malarious exhalation from these stagnant pools, is the principal cause of fever and ague amongst the native population. I would suggest that no person should be allowed to dig a tank within the limits of Calcutta smaller than such dimensions might seem necessary to the Conservancy department, to keep it pure, and that all smaller ones should be filled up, that Government should cause to be dug, four large

Tanks (similar to the one before the Hindoo College,) in every square mile of Calcutta, two to be appropriated for bathing and two for drinking, and these would be sufficient for every purpose, and would keep the city much more free from fever in future.

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22d May, 1837.

Natives have also in their compounds and small open spaces behind their houses, many of these small tanks, the stench from which during the hot weather sometimes is almost intolerable. I would suggest that none of these should be allowed to remain, but that all tanks under certain dimensions, whether enclosed within walls, or otherwise, should be filled up, and parties not allowed to dig any under the dimensions fixed.

MUTTY LOLL SEAL.

Calcutta, 10th May, 1837.

No. 58 A.

May, 1837.

No. 58 A.

R. Cowasjee, Esq.
May, 1837.

RUSTOMJEE COWASJEE, Esq.

Having been present at several of the late fires that have devastated the city, I beg to lay before the meeting a statement of facts that come under my personal observation. During the great fire that extended all along the Upper Circular Road, I particularly noticed the scarcity of water in that direction. I observed some fire engines on the spot, but they were rendered perfectly useless for want of water, there being few, if any tanks in the vicinity of the fire, the consequence was that there was nothing to check the fury of the flames which went on consuming every hut and building in the way with fearful rapidity.

I think the Committee ought to bring this to the notice of Government, and that too without delay, as a more favorable opportunity for purchasing ground and digging tanks could not present itself than the present. I would recommend that a line of deep, large tanks should be immediately dug, at convenient distances, all along the Upper Circular Road, where water is more scarce than in any other part of the town. The ground might now be purchased at moderate prices before the proprietors have time to erect new huts on the site of those burnt down. I think the Government ought to bear the expense, but as an inducement for them to come forward, I will undertake, if Government will buy the ground, to excavate at my own expense four large tanks between the Boitaconnah, Mirzapore and Manicktollah, and I am sure that many rich land-holders will readily do as much or more in other parts of the town.

I take this opportunity also to bring to the notice of the meeting the great distress that prevails among the poor people who have been burnt out of their houses—many of these poor creatures having lost all they possessed, have no

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means of renewing their habitations, and are actually starving for want of food. I have no doubt but that Government will (if it has not already) contribute liberally to their relief, but the public should aid them in this charitable work. I know many who are ready to contribute handsomely, provided they can be assured that their contributions will be properly applied. I would suggest that a Committee be appointed to enquire into the truth of the representations that may be brought before them, with full powers to aid such of the poor as actually stand in need of it. The Committee to consist of persons well acquainted with the locality of the City and the Suburbs. The Superintendent of Police should be on the Committee.

It should be urged upon Government by the Committee that hereafter it be imperative on the natives to build their huts with tiled roofs; it is a mistake to suppose that the expense thereof will be much greater than thatch, especially at present when in consequence of the number of fires that have occurred within the last month, straw suitable for thatching, has greatly risen in price. On an average I am persuaded that the difference between a thatched and tiled roof will not exceed one rupee eight annas for each hut, or at the utmost two rupees. It is argued that the heat under a tiled roof will be much greater than under a thatch, and that sickness will be engendered in consequence, but how is it at Bombay and at Madras where the native huts are roofed entirely with tiles, you seldom hear of fires there, and I doubt if sickness be more prevalent than it would be were thatched houses used.

These are mere suggestions for the consideration of the meeting, but whether adopted or not I am sure you will all agree with me that something should be immediately done to relieve the distressed poor.

(Signed) RUSTOMJEE COWASJEE.

May, 1837.

No. 59.

22d May, 1837.

No. 59.
R. Cowasjee, Esq.
22d May, 1837.

RUSTOMJEE COWASJEE, Esq.

In my former Minute on the subject of the late fires, I gave it as my opinion that all persons should be compelled to erect their dwellings of less inflammable materials than thatch and mats

The chief objection which I learn the authorities have, to pass such a Law, is the hardship it will occasion to the poor, by increasing the expense of their huts ; but I think I can without much trouble convince the Committee that no such result would follow the measure. I know from my own experience that a hut or shed with mud walls and tiled roof may be erected at a cost not exceeding 25 to 30 per cent. over one built of mats and straw ; while the expense of keeping the former in repair is infinitely less than that of the latter. Those who have paid any attention to the subject must know that a thatched roof, if not requiring *complete* renewal annually, at least requires very considerable repairs, while on the other hand, in the more solid and safe description of building, the walls require no repairs but such as the inmates may give them, free of expense, while the few tiles, broken or displaced may be replaced for a few annas.

Another advantage which they possess over the thatched huts is that while the latter, give it what repairs you may, will seldom last more than two or three years, the former, if properly built at first, will if a little care be taken to renew from time to time the lashings of the frame work that supports the roof, last six, eight, or even ten years, so that in fact although the proprietor of the hut be originally put to the expense of a few rupees extra, he will be more than compensated for it, in two or three years, by the saving he makes in the repairs (to say nothing of the greater security of his property from fire).

The landlord, too, would benefit by the measure, inasmuch as he would have better security for his rent. In most cases the proprietors of land let it out in small patches to individuals, who build their own huts on it. If the tenant be a poor man or not likely to remain long on the spot he constructs as cheap a dwelling as he can, it frequently happens that the tenant is unable to pay his rent, his debt increases, his hut, the only security the landlord has, is sold to pay the claim, if of thatch it produces a mere trifle, whereas if well-constructed it will readily realize a price proportionate to its original cost ; again, where the landlord himself owns the hut, he gets a higher rent by 40 or 50 per cent. for a tiled one, than for one of thatch.

Thus then I have attempted to shew that if compelled to build in a substantial manner, the natives so far from suffering injury thereby, will in fact be gainers.

No. 59.

R. Cowasjee, Esq.
22d May, 1837.

That there would be an outcry against such a Regulation, at first, I have not the least doubt, but when once the law is passed and enforced, compliance will readily follow. The fact is that if left to themselves, the natives of Bengal with a few enlightened exceptions will not move one step out of their way to make the slightest improvement, they will not expend a rupee extra, even though you convince them that by so doing they will gain double the amount. But if forced to do it, by the strong arm of power, they will grumble at the hardship at first and then, when they begin to feel the beneficial effects of the measure, they will admit the wisdom of it.

On going over the ground the scite of the late fires, I observed the ruins of many well built huts with mud walls, and at a rough guess, I estimate the number to have been considerably more than half of those consumed. These as well, as several *puckah* houses, would have been saved but for their vicinity to the straw huts, which in many cases are erected close up to the very walls and windows of the tiled and *puckah* houses, but the Police, it seems, had not the power to prevent their erection, or to enforce their being built of less inflammable materials and thus the fire spread without the possibility of check or controul.

I mentioned in my last paper that at Bombay and Madras no thatched buildings are allowed in the Towns. In Bombay the prohibition was ordered in 1805, when in consequence of a devastating fire that lasted three days, Government issued an order that in future no thatched buildings should be allowed. The order was obeyed, and the consequence has been that fires have been far less frequent there since that time, and when they do take place are easily extinguished.

Another point to which I would call the attention of the authorities, and especially of the Fever Hospital Committee, is the necessity that exists for enforcing *cleanliness* among the natives, the best means of doing which is by compelling the landlords to divide off their ground among their tenants in such a manner as shall prevent the accumulation of filth that now takes place. The present practice with few exceptions is thus:—A man possessed of a piece of land lets it out piecemeal to twenty or thirty tenants, perhaps in the very centre of the patch, those, who first commence building, dig a hole for the purpose of supplying themselves with mud to raise their floors with, their example is followed by the rest—into this hole or pit is thrown the whole of the accumulated filth of the surrounding village, not even excepting the ordure of the inhabitants. In the course of time, with the aid of sun and rain it becomes a perfect nuisance, contaminating the whole of the surrounding atmosphere and as a matter of course engendering fever, and other malignant diseases; from these sink-holes the filth is never removed!

But it is useless to attempt to describe the nuisance on paper, let one or more of the European Committee accompany me to those parts that are inhabited by natives and I will venture to say that they will be better convinced in one hour, of the correctness of what I have said than by the evidence of fifty witnesses in a week.

The only way that occurs to me of remedying this evil, is to compel the natives to erect their huts with greater regularity, and to impose a fine on the land-

lord, as well as on the tenants wherever such sink-holes and filth may be found. Regularity in the buildings would cause a freer circulation of air than can be the case where huts are huddled together, and moreover the landlord will be a gainer, inasmuch as he will then be able to let out the ground that at present, from its contiguity to the nuisance, no one will take. For the accommodation of the natives, public tatties might be erected in various parts of the town, or if that could not be, the proprietors of land might be compelled to appropriate some corner of their property for the purpose, so situated as that the filth might be removed by the conservancy carts.

No. 69.
R. Cowasjee, Esq.
22d May, 1837.

On the subject of the scarcity of water in various parts of the town, as pointed out in my former minute, I have been requested to lay before the Meeting the accompanying petition, signed by a great number of the inhabitants of Boitaconnah and Bow Bazar, the petition as will be seen, is addressed to, and was intended for the Lottery Committee, but the subscribers having learnt, that that Committee had not power to attend to their suggestions, have through their representative Mr. A. DeSouza, requested me to lay it before you, in order to ensure its coming under the perusal of the Government. You will observe that not only is it represented therein that a great scarcity of water exists in cases of fire; but that even for culinary and other purposes the inhabitants are greatly inconvenienced by the want of tanks. In Mr. DeSouza's letter to me, which accompanies the petition, you will perceive a suggestion that a tank should be dug on the ~~spot~~ of the late Boitaconnah Bazar behind the Roman Catholic Church, the ground belongs to the Government, who it seems are about to dispose of it, but if applied to, for the purpose suggested by Mr. DeSouza, I am sure the Government will grant the request. *at*

There are many other points on which I might dwell, as conducive to the safety of the town, and the health and comforts of the inhabitants; but I have already occupied too much of your time and shall therefore defer them to some other day.

RUSTOMJEE COWASJEE.

Calcutta, 11th May, 1837.

No. 59. A.

A. DeSouza, Esq.

No. 59 A.

RUSTOMJEE COWASJEE, Esquire.

MY DEAR SIR,

As you are a Member of the Fever Hospital and also one of the Committee for the Improvement of the Town of Calcutta, I beg to enclose the original letter which was recently addressed by the inhabitants of Boitaconnah to the Lottery Committee, soliciting their aid and influence in converting the parcel of land, commonly known by the name of the Boitaconnah Bazar, which is the *property of Government*, for the purpose of making a tank for public use. In addition to the Memorial herein enclosed, I beg to state for your information that I understand the said property is shortly to be disposed of, in consequence of the present tenant being obliged to forego his claim against the ryots, from all the thatched buildings having been destroyed by fire, the present is therefore the best opportunity for the Government to authorize the disposal of this land, estimated about *one biggah*, for the purpose solicited by the Memorialists. In the hope that you will take an early opportunity in submitting the enclosed to the *General Committee* for their early consideration and that they may lay before Government.

I remain, your's very faithfully,

A. DESOUZA.

8th May, 1837.

TO C. TROWER, C. R. BARWELL, J. MASTER, D. MACFARLAN AND G. J. GORDON, ESQUIRES.

Members of the Lottery Committee, &c. &c.

GENTLEMEN,

We, the undersigned inhabitants residing in the Lower Bow Bazar, and Boitackhana street, and Middle Circular Road, viewing with admiration the various and confessedly great improvements which the Lottery Committee, under the orders of Government, have from time to time made within the Town of Calcutta, beg, on behalf of ourselves, and other inhabitants residing in the Bow Bazar, Boitackhana and Middle Circular Roads, to draw your attention to the want of a public tank in a central situation in their neighbourhood.

There are a few tanks to which we could without molestation resort, but the water in them in the dry season becomes in a state of stagnation, and over whose surface a green slimy substance coagulates, thereby rendering it more filthy and totally unfit for domestic purposes, and it is doubtful whether the drinking of it would be healthy.

The water from one or two tanks of private individuals, which is permitted to be taken only during the rainy season, allow but a scanty supply, and that but at certain hours in the day, which the inhabitants could not at all times command, and on that account are put to frequent and great distress from the want of an article so necessary, particularly in the scorching heat and dry season, and it is really a pity to see the poor and indigent class of the native population begging about for water from place to place.

We beg to submit, that the most central spot which presents to our view for the excavation of a *public tank*, is that of the petty Bazar south of the Boitackhana Roman Catholic Church.

This spot is said to belong to the Honorable Company, and the Revenues realized from the Bazar are, we understand, very trifling, for the straw huts are often burnt down, thereby endangering the lives and property of the inhabitants of the adjoining houses. This spot, with the addition of *a few* cottahs of ground on the west (which might be procured at a very moderate rate) would admit of a long tank of the dimension of the one in Champatolah, down Amherst Street.

We feel no hesitation in giving it as our opinion, that a more central spot for a tank, calculated to afford convenience to a populous neighbourhood, could not be selected; for, exclusive of the Middle Circular Road, Sealdah, Mirzapore, there would be several other communications to the tank, i. e. by Chore Bagaun, from Boitackhana Street, Serpentine Lane, Dixon's Lane, &c. &c. to supply the inhabitants of St. James' Church Street, Shakaree Tolah, Lemboo Tolah, &c. and further that the expense for the excavation of this tank, added to the cost of a small quantity of ground on the west of the Bazar, would in the aggregate amount to less than any tank hitherto dug under orders of Government.

You, Gentlemen, who are ever alive to the public interests, will, we doubt not, recommend to Government an extension of its liberality to contribute to the comforts of the inhabitants, in respect to the digging of the tank in question, a benefit so easily bestowed, and so widely diffused.

As a further inducement to Government to improve the state of the Lower Bow Bazar and Boitackhana Street, we beg leave to bring to notice the extreme dusty state of the road, a circumstance which has had a considerable effect in depreciating the value of the property in that street, and that the want of a tank debars the principal inhabitants from having the roads watered in front of their respective premises.

We confidently hope that you may be pleased to bestow your early attention on this our representation, and bring it to the favorable attention of Government.

We have the honor, &c.

(Signed by 90 Inhabitants.)

Calcutta, 15th December, 1836.

No. 60.

A. St. L. McMahon, Esq.
25th May, 1837.

No. 60.

25th May, 1837.

A. ST. L. McMAHON, Esq.

*Replies to the Queries proposed to the Magistrates by Mr. Secretary
Mangles under the Orders of Government.*

Q. 1. How far the system established by the Resolutions of the 12th October, 1836, and which has had a trial of four years has been found practically superior to that which it superceded?—A. I feel considerable difficulty in offering any opinion as to the merits of the two systems, chiefly because the watch and ward of the town is now under the exclusive controul of the Chief Magistrate and Superintendent of Police, instead of being as formerly under that of the Magistrates in the Report Department. Under the old system the Magistrates took their reports at the Police Office, whereas the Superintendent takes them at his own house, so that formerly I occasionally sat with the Magistrate while taking the report and frequently joined him in disposing of cases as they were brought before him, and thus had an opportunity of becoming acquainted with the conduct of the Police Officers. At present I have no such opportunities, and can only draw loose inferences incidentally from circumstances that turn up in cases that come before me judicially, or for commitment. My inferences I may add are favorable to the Calcutta Police. I should doubt whether there is much better protection for person, or property, in any great Seaport, particularly when I advert to the nature of our population, the facilities and temptations to crime, arising from that, and even from the climate itself.

Q. 2. Are crimes fewer or less heinous?—A. Judging from the cases brought before me in the two Divisions I have had charge of, I should say there has been little or no change in the frequency of crime, or of the heinousness of its character.

Q. 3. Are the perpetrators more frequently apprehended, and if apprehended more frequently punished by sentence of the Magistrates or by the Supreme Court?—A. In all these points I cannot say that I perceive much difference.

Q. 4. Are more or less of the crimes committed brought to the official knowledge of the Magistrates or of the Superintendent of Police?—A. For the reason before explained, I cannot satisfactorily speak to this point as the Superintendent takes all the reports at his own house. I have had occasion however to know that in cases where no person is apprehended, the offence is not brought to the notice of the Division Magistrate, and this even in some cases where parties have been in custody.

Q. 5. Are the benefits rendered the community by the Police, more or less alloyed by the abuse of the power necessarily entrusted to its executive officers?—

A. To this point likewise I am only able to speak from incidental circumstances that may come to light in the course of my investigation into such Division cases as are sent up to me. But I should say that the readiness with which complaints against abuses of power are attended to, and the facilities for bringing such to the notice of the public, if redress were denied by the Magistracy, have their natural effect of intimidation, and gradually operate on the proneness of the Chowkeedars and other underlings to corruption and abuse of power.

No. 60.

A. St. L. McMahon, Esq.
25th May, 1837.

Q. 6. Are Natives or Europeans found the best qualified to the effective and unobjectionable executive agents of Police in the city, and if some of the latter are indispensable, in what proportion, under what limits and under what restrictions ought they to be employed?—**A.** I am of opinion that it is best to employ Europeans in all cases where process has to be served on Europeans, or where resistance may be expected, but in other cases, I think Natives preferable: our present Constables, and indeed those for some years past have been much more respectable than the same class when I first joined the Police in 1824, this I attribute to the great influx of Europeans into Calcutta, which gives greater latitude for selection among respectable persons in humble life, disappointed of bettering themselves. On the whole I am not aware of any sufficient reason for desiring any change in the present practice with regard to the employment of Europeans in the Police. The advancement of Mr. McCann I am satisfied has had a very beneficial operation on the hopes and fears of the European class, and I think it of great importance that persons of this class, who are exposed to much temptation in multiplied forms, should always have something to look forward to, in the shape of promotion for good conduct, and reward for integrity.

Q. 7. What steps have been taken and with what success to check the depredations understood to be very frequent and extensive, which are supposed to be committed upon their employers by the domestic servants of English or Anglo-Indian residents in Calcutta?—**A.** Upon these points, and for the reason previously urged more than once, I do not consider myself to be in a position to offer any very strong opinions. But I can say that when crimes of the class referred to fall under my own, and I may say my colleague's cognizance, they are visited with greater severity of punishment than would befall the like offences perpetrated by ordinary individuals, unconnected with the injured parties. Although I cannot take on myself, being without means of accurately judging, to say whether crime of this quality is on the increase or not, yet I must repeat, what I have before hinted as my opinion, that the absolute amount of depredations even in this domestic class, is not alarmingly great. In judging of this question we ought to consider the climate, with its open doors and windows, the detached style of building houses and offices, the number of servants, and followers, compared with masters. The trusting and careless habits of the latter, and the greatness of the temptation to pilfer in a country where the value of money is so high, wages and absolute necessities of life so low, and by consequence where a tea spoon, or stray coin is worth so much more to the thief who takes it than to the careless master who is plundered.

No. 60.
A St. L. McMahon, Esq.,
25th May, 1837.

On the subject discussed in paragraphs 17 and 18 of the Chief Magistrate's report for the year 1835 respecting the field of occupation for the new Magistrates and for the duties of the Conservancy Department—I beg to say that I am ready to take up all conservancy cases that occur in my Division, and with which a single Magistrate has power legally to deal. With regard to the present or future honorary Magistrates I should think that the best and most useful way for the public in which they could employ themselves for sometime would be to sit at their convenience with one or other of the Division Magistrates, and assist to dispose of cases on the file in which the non-stipendiary, particularly if a native Magistrate, might render great assistance in sifting evidence and judging of credibilities.

A. ST. L. McMAHON.

No. 61.
C. K. Robison, Esq.
25th May, 1837.

No. 61.

25th May, 1837.

C. K. ROBISON, Esq.

To the Secretary of the first Sub-Committee of Municipal Enquiry.

SIR,

Having been requested by the Sub-Committee, when I was before it on the 18th current, to commit to paper any suggestions I could afford them of a plan for vesting the collection and disbursement of the assessment upon houses, in a Municipal body, instead of a single individual, as at present, I beg to send you the following outline.

The groundwork of such an establishment ought, in my opinion, to consist of the whole male inhabitants and householders who pay annual rents and house tax to a specified amount. These should have the power to nominate representatives, who, when deputed, would form a "Board of Commissioners of Police."

In furtherance of this, the city ~~be~~ be divided into departments or wards, and the inhabitants of each ward should have the power of voting for one General and two Resident Commissioners, who would remain in office for one year, but be capable of re-election.

The amount of house rent entitling an inhabitant to vote must, for the present, be comparatively high, and might be fixed at Rs. 30 a month in all streets south of Colootollah, and Rs. 15 in all streets to the north of it, according to the assessment books ;—no one should be allowed to vote who is in arrear of his house tax.

This body of Commissioners to be increased by certain Commissioners, ex-officiis; viz. the Magistrates, the Sheriff, Town Major, the Junior Members of the Revenue, Military, Medical, and Marine Boards, so as to represent the several branches of the service, and by the Chairman of the Chamber of Commerce and Trade Association, thereby representing the remaining inhabitants.

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C. K. Robison, Esq.
25th May, 1837.

It should be made the duty of the *General Committee of Wards*, and of the Resident Commissioners of each, to act as local guardians of their districts; they should be head constables within their respective wards, becoming acquainted with the occupations and characters of all the inmates thereof; they should keep an eye over the conduct of the day and night watchmen within it; they should quell all disturbances and improprieties within it, take cognizance of, and use all means for suppressing gaming and other improper houses; sign certificates of character to entitle Tavern and Boarding-house keepers, and also retailers of spirits, to procure licenses, and collect the sentiments of the inhabitants on all cases of interest.

They would also, in conjunction with the Commissioners, ex-officiis, form a deliberative assembly, and hold special and regular *statutory* meetings at which all public measures regarding the cleaning, watching and lighting of the city, are discussed of. They should, at these meetings, appoint officers, regulate salaries, levy the assessment and possess the whole springs of the executive; Committees should be named out of these Commissioners, for transacting the principal business.

The election of the Commissioners, except those ex-officiis, should take place on a fixed day every year, at a specified place in each ward, where a clerk should sit to receive the votes and signatures of the electors, and no one should be allowed to vote by proxy, but every one voting should attend personally, the books should be open for two days, and at a certain hour the votes counted, and the successful candidate declared.

The execution of the Police might be thus arranged, a superintendent of local knowledge, and of certain legal experience should be chosen by the Board, who should be the instrument of prosecution on all occasions before the Magistrates; he must have legal power to apprehend and detain for a limited period; and also to institute preliminary investigations, in the same manner as procurators fiscal are permitted to do by the Scots criminal law. He should have as many deputies as there are magisterial divisions of the Town, and immediately under these should be town serjeants and native officers. There should be inspectors of lighting and cleaning the streets, and a master of fire engines.

In each division there should be one or two places for lodging complaints and detaining culprits, till the preliminary investigation is concluded, when they should be forwarded to the head office.

Criminal Courts in each division should be held every lawful day where the Magistrates should sit and try all cases brought before them; punishing summarily

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C. K. Robison, Esq.
25th May, 1837.

where they have the power, and referring to the criminal sessions such cases as, by law, require to be tried before a jury.

The General, and Resident Commissioners, by election, would thus, it is to be expected, possess the character of ubiquity; if they were scrupulous in inspecting the whole details of the establishment, and localities of their wards, both as regards the situation of prisoners and the dispensation of the funds for their maintenance. They ought to visit the head and subordinate watchhouses, both day and night, and be rigorous in exacting the proper execution of the duties of the officers. No abuse if proper vigilance were used could escape them, and they would not only secure the good will of their constituents, but be proud of their office, and ambitious of being re-elected.

On the foregoing plan, and supposing that each of the present *four* Divisions of the Town were divided into two, from South to North, at any convenient street making eight Wards, the following would be the Police and Conservancy Board of Commissioners in Calcutta.

1st.—General Commissioners, ex-officiis, Stipendiary Magistrates, ...	3
Sheriff,	1
Town Major,.....	1
Junior Member of the Revenue, Military, Medical and Marine } Boards,*	4
Chairman of the Chamber of Commerce and of Trade } Association,†	2
	<hr/> 11
2d.—General Commissioners of Wards, by election <i>one</i> in each,.....	8
3d.—Resident Commissioners of Wards, <i>two</i> in each,	16
	<hr/> 35

* In order to represent the Civil, Military, Medical and Marine Services.

† To represent the remaining European Inhabitants.

Although eight wards have been suggested in the first place, I would urge the increase of these to double or even treble the number, so soon as the first Commissioners elected became accustomed to their duties.

Such a system of Municipal management has been found to answer admirably in Britain, and it appears to me that Calcutta contains materials for a Board limited as I have suggested, in point of numbers.

I am, Sir,

Your obedient Servant,

C. K. ROBISON.

22d May, 1837.

No. 62.

25th May, 1837.

C. K. ROBISON, Esq.

No. 62.

C. K. Robison, Esq.
25th May, 1837.*To the Secretary to the First Committee of Municipal Enquiry.*

SIR,

In the outline plan of a Municipal body for managing the levying and disbursement of the House Tax of Calcutta, which I sent in yesterday, in compliance with the request of the Committee, I did not offer a single word of argument in favor of such a system of Police, because I understood that all that was asked of me was, how such a body could, in my opinion, be organized *in this place*, but I have a strong predilection for such forms of management wherever they are practicable, and as I think that many reasons exist here for making the experiment, I shall trouble the Committee with a few of them, without stopping to explain how far these are either borrowed or original, but merely stating that they entirely accord with my own experience, and ~~in all particulars~~, in all particulars.

To coerce so idle and immoral a population as that of the lower orders of Calcutta, and to restrain them from committing crimes is a task of no ordinary difficulty, and when taken in the aggregate, most people will say it is impossible; yet if we ask ourselves, can we restrain the inhabitants of a small village from crime, or detect the offenders, we should answer in the affirmative, and think the task easy; *division* is therefore indicated, which must be carried into effect in such manner, that there shall be always a regular well defined mode of conveying the impetus from the known to the badly informed. The intermediate agents must be distinct, that they may not clash, and each perform just so much as is allotted to it. After this sub-division there must be classification and combination; several small divisions must be combined into a large one; and these, again into larger, till the whole be united under one moving power.

It is impossible for any Government to keep up an establishment in regular pay sufficient for the purposes of an efficient Police, independent of the people, and if it were possible, it would be highly objectionable. All that is, or ought to be requisite under any circumstances, is an establishment sufficient to conduct the details of the duty, and to afford the people a rallying point, when their more active exertions are required to preserve the peace, or to apprehend offenders; for as the peaceable and well disposed must far outnumber those who are disturbers of the peace; the latter must always be overpowered when it is necessary to call forth the other part of the community against them.

To discover, then, what individuals are evil disposed is an essential, indeed, indispensable step in the formation of an efficient system of preventive Police. This can only be done through the medium of the individuals who compose the com-

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munity, and only with safety, through the respectable part of them. The hired officers of Government are not sufficiently admitted into the confidence of the people to be competent to give this information, nor could their information be safely relied on. They would extort money by using threats of informing; or exaggerate the information they gave, to enhance their own importance and the value of their services, whereas respectable individuals, chosen by themselves, would have the welfare of the community at heart, and though often loath to accuse, they would be just in their accusations. Thus the worst effects of espionage would be avoided, and the certainty of discovery, not perhaps of minor, but of all criminals, would be effected; for no man who was an offender, to the extent of crime, could reside in one of the smaller divisions without being known to the community as a person who procures his livelihood by unlawful means, and this would become still less possible were a respectable person among them, one in the confidence of his neighbours specially appointed, and expected to be informed, and to give information of the mode of life of suspected persons. This special nomination or appointment is necessary; for it is that only which rescues the person nominated from the odium attached, in all countries, to an informer, and makes the people among whom he resides, as well as those whom he may detect, respect and submit to him.

It is not merely the actual fitness of such a system for the discovery and apprehension of offenders that renders it so powerful, but the moral effect it produces on the minds of the wicked, who can never be sure of not being deceived and detected, even by their accomplices, or by those in whom, to make their crimes profitable, they must place confidence.

Many, I know, are of opinion that the respectable individuals, to whom I allude, would not accept of such authority.—I think they would. It would be a mark of the confidence of Government and of their fellow citizens, and consequently a distinction. It would moreover enable them to do much good in their neighbourhood; and thus, they would become more active contributors towards the general welfare of the community than private stations admit of; a motive of itself too strong, and a feeling far too general amongst such men, to admit of the want of candidates.

I am one of those, who, entertaining, perhaps, a more favorable opinion than some others, of the *upper classes of* Natives in this country, are anxious that they should be instructed how to assist in the proper government of it, rather than that they should be kept in perpetual domination; and as the successful systems of Calcutta may be expected to extend themselves to the surrounding Zillahs, and the Upper Provinces, I would desire to see this form of Police tried within it, as all errors can be immediately corrected, and no possible danger or mischief arise from any imperfection, or the want of success.

Trusting that these hurried lines will be received indulgently by the Committee,

I remain, Sir,

Your obedient Servant,

C. K. ROBISON.

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David Hare, Esq.
25th May, 1837.DAVID HARE, Esq. *Secretary to the Medical College.**Scheme for the Hospital proposed to be attached to the Medical College.*

1. The proposed Hospital should consist of buildings capable of accommodating separately three classes of individuals. 1st, Hindoos of high caste; 2d, Mahometans and Hindoos of lower caste; 3dly, Women. A portion of the institution might likewise be set apart for Christians, many of whom would gladly avail themselves of the advantages of the Hospital. For these purposes a structure might be erected forming three sides of a square, each of the sides being distinct from the other, more especially that which is destined to receive the 1st class patients. The whole should be capable of containing 500 individuals. Two tanks at least would be necessary, quarters for a resident surgeon and numerous out offices.

2. The ground now occupied by the Police Hospital is amply sufficient for all the present purposes of such an institution, as the Committee may observe by a reference to the accompanying plan of those premises and ground plan of the proposed building. The total cost of erecting the structure there in contemplation is estimated by private builders at 50,000 Rupees. Natives probably would contract for a much smaller sum but the work would be very inferior. In recommending this site for the new Hospital, we of course contemplate the removal of that which now occupies the ground, another situation for which might easily be found, whilst the materials of the old will then become available for the new building.

3. It will of course be necessary to divide the Hospital effectually from the Medical College, but a high wall will answer that object completely, and with such a separation, we do not contemplate any injury to the College from the interference or curiosity of the Hospital inhabitants. Neither do we anticipate any difficulty on the part of the natives to avail themselves of the benefits offered them by the institution, because of its proximity to an anatomical school, whose operations they never will be permitted to witness, about which they can learn nothing except by report.

4. At the same time in conducting the management of the Hospital strict attention should be paid to the feelings and prejudices of the natives, and every precaution adopted which might remove from their minds any dread or dislike to enter an establishment that promises so great advantages to the native inhabitants of Calcutta.

5. It appears to us that the new institution should embrace the treatment of every variety of disorder, Surgical as well as Medical, perhaps therefore the term Native *General Hospital* would be more appropriate than that of Fever Hospital.

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6. An out patient room or Dispensary will be necessary wherein to examine, and prescribe for those who are able to attend there daily, and from whence cases may be selected for the Hospital wards.

7. If this institution be intended to form a useful school for the pupils of the College, the medical charge of the patients should be entrusted entirely to the Professor of that establishment. We have already proffered our services for this purpose and we beg once more to express our willingness to be entrusted with the duties in question, provided the Hospital be not placed under the controul of any superior medical officer. The appointment of such an individual as a Senior Surgeon or Superintendent is quite unnecessary in the proposed establishment. It would prove a burthensome addition to the expenses, and it would probably interfere with the advantages of the Hospital as regards the Medical College students. It is manifest that the Professors can employ the cases in the Hospital wards as a source of instruction to their pupils with far better success if the patients are placed completely under their management, than if the sick were in charge of another medical officer who might not always co-operate with them in their views of the treatment necessary for the patients, or the conduct requisite to be displayed towards the pupils.

8. A resident Surgeon will be needed, to attend in cases of emergency and to take charge of the sick during the absence of the visiting medical officers, quarters therefore must be provided for him and his salary may be 200 Rs. per month. The charge of the various wards may be assigned to the medical officers in equal proportion, the resident Surgeon taking his share in addition to the general duties which will devolve upon him.

9. The office of dressers and assistants should be performed by the pupils as in the European Hospitals, and these duties, highly important and instructive as they are, would soon become objects of honorable competition among the College students.

10. An Apothecary will also be required upon a salary of 100 rupees per month.

11. The establishment of servants, &c. might be as follows:—

1 Writer,	25
1 Compounder,	12
2 Dressers,	10
4 Bearers at 4 each,	16
3 Cooks at 5 each,	15
2 Bheesties at 4-8 each,	9
2 Bharees at 4-8 each,	9
2 Mehters at 4 each,	8
1 Matranee at 5,	5
2 Moordaferoshes at 3 each,	6
1 Dhobie,	10

Although the Hospital should be built with facilities for accommodating 500 individuals it is improbable that there will at present be more than 200 in patients, possibly they will not exceed 150 for some years, but allowing for the utmost number that can be expected the diet money of 200 at two annas each per day will amount per mensem to Rs. 750.

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The total monthly cost of the Hospital will then be as follows.

Resident Surgeon,.....	200
Apothecary,.....	100
Servants,.....	125
Food, &c. for 200 Patients,.....	750
Bazar Medicines and Sundries,.....	125

Total Rupees 1,300

12. If the proposition of erecting the Hospital upon the site pointed out in this paper be not approved, sufficient ground could unquestionably be procured in the immediate neighbourhood of the Medical College for about 20,000 or 25,000, or it might be rented at 150 or 200 Rupees per month. In either case while the buildings are in course of erection temporary accommodation could be afforded to the patients in choppured huts and tents.

DAVID HARE,
Secretary Medical College.

Medical College, the 25th May, 1837.

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25th May, 1837.

DR. A. R. JACKSON.

No 64.

Dr A R Jackson,
25th May, 1837.

I have very carefully gone over the report of the College Council as contained in Mr. Hare's letter of the 9th March, and without hesitation agree with that body in recommending that "an Hospital be established near the Medical College, in order that the pupils may have the benefit of Clinical instructions," but while I am thus fully impressed with the belief of its importance and its necessities for the purposes of efficient Medical education, yet, as a member of the Fever Hospital Committee, and in that capacity one of the guardians of the Funds entrusted to our care for its establishment and maintenance, I feel myself bound to differ from the framers of the above report in many of its details, and more especially in regard to a deviation from their original intention, that the proposed Hospital should not be erected within the premises of the Medical College, but in its vicinity.

The principal object in the foundation of the Fever Hospital, was the care of the sick, and the alleviation of their misery, and it was one of its principal claims

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Dr A. R. Jackson,
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to public support that the prejudices and feelings of all classes and castes of patients were to be strictly respected, and separate accommodation and attendance, as far as could be, provided for each. Were the plan now proposed by the Professors of the College adopted, viz. to have the Hospital built over the ranges at present occupied as Library, &c. no doubt some saving in outlay of money would be effected, but then not only would the benevolent intentions of the subscribers be defeated, but as a consequence, the hopes and wishes of the Professors themselves, as far as having the means of Clinical instructions, for an Hospital erected and conducted on the premises would never be more than the Police Hospital, already in existence on the spot, now is, viz. a place of shelter for the destitute and dying during the few hours exhausted nature has left it to linger out the miserable remnant of life.

From my own knowledge of Native patients, and the opinions of very many members of the Native community with whom I have consulted on this occasion, I am satisfied that nothing but disappointment would result to all parties from the adoption of such a measure, which although apparently economical in one sense, would on the other prove a most useless expenditure of Funds, in the obtaining of which so much difficulty has been experienced. I do therefore earnestly hope, that the Professors of the College will see the necessity of withdrawing this part of their plan, and adhere to the one first thought of, viz. having the Hospital in the neighbourhood of the College and as near to it as a proper site can be obtained.

In arranging the method of Hospital management we must not forget that *our* first duty is towards the patients and their accommodation, that the idea of making the Hospital a place of Clinical instruction is a secondary consideration, though no doubt a most important branch of our scheme. Under this view I should say that the ordinary Medical attendance of the Hospital ought to be vested in one or more Medical officers, elected by the subscribers, and totally unconnected with the College, that the plan followed in the Edinburgh Hospital (Infirmary) be adopted as the model here, viz. that there be ordinary wards for general patients, and Clinical wards for the use of the Professors, and that these be assigned to them for their exclusive use, and that they should not further interfere with the management of the Institution; for if once the idea gets abroad into the minds of the Native population, that the Hospital is a part of the College establishment, and the source from whence subjects for dissection are to be supplied to it, its usefulness for the purposes of a General Hospital of relief to sick Natives is at an end.

One circumstance, to which I have before alluded, seems entirely to have escaped the minds of the Council,—the prejudice and feeling of caste, and which to make our Institution at all valuable in the eyes of the Natives, or sought after by them, must be most scrupulously attended to and provided for.

The attaching a Dispensary, which would at the same time serve as a receiving room for such sick as would remain in-patients, I think would be a most useful addition, where all the Medical officers might attend on stated days in rotation, and allot the patients to the different wards,—clinical and ordinary, on their respective

days, or this allotment might be made by the resident Surgeon of the Institution to whom might be given over the executive of the Dispensary. At the same time, it should be distinctly understood that no patient should be obliged to go to the Clinical wards, who did not wish to do so or retained there, if he preferred the other.

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The minor details may be easily delayed for future adjustment,—they seem generally provided for in the report of the Council, and with a few alterations may be readily brought into operation.

On the other question to which our attention has been directed, viz. the superiority or otherwise of Hospitals over Dispensaries, my opinion remains unchanged. In cases where the Funds are limited to a certain extent in provincial towns and villages, I think it probable more may be done towards the prevention of disease and preservation of health generally, by Dispensaries, when once the inhabitants are instructed in the advantages of early application on the first appearance of illness; but in large cities where from the crowding together of the houses, and the consequent want of ventilation, the employment of the people in different manufactures and trades, exposure to all kinds of accidents, acute and sudden attacks of disease must necessarily occur both in greater number and severity, Dispensaries can afford but little or no relief as to prevention, and certainly none as to treatment, for it is only in the wards of a well provided and attended Hospital that this can be accomplished, either with benefit to the patients, or satisfaction to the practitioner, and I do not believe there is another city in the world of the same extent as to size, or of the same wealth as Calcutta, where there are not three or four Institutions of this description amply and liberally provided for by the voluntary contributions of the citizens themselves, without the support or assistance of Government in any way, but as it appears this cannot be done in this country without such assistance, I cannot for a moment put the two plans in comparison as far as Calcutta is concerned, and am fully convinced that without an Hospital, the good effected in the formation and maintenance of Dispensaries, will prove a most inadequate return for the money thus expended.

A. R. JACKSON.

Calcutta, 18th May, 1837.

No. 65.

Modoosoodun Gupta,
29th May, 1837.

No. 65.

29th May, 1837.

MODOOSOODUN GUPTA, examined.

Q. 1. We believe you have some Medical practice amongst the Natives. Will you state your opinion whether there will be any prejudice on the part of the poor sick Natives to resort to a Hospital or Dispensary?—**A.** The poorer class of Natives have no prejudice against the Hospitals, but the better classes have. If a Hospital is to be established and the respectable Natives would encourage the poorer class to enter it by recommending those, who wait upon them daily, to go to it when sick, and explain to them the advantages of the Institution, I think the Hospital would succeed.

Q. 2. Do you think whether the establishment of a Central Hospital or Dispensaries with or without beds in different parts of the town, would afford the best relief to the poor?—**A.** I think that Dispensaries with beds would afford the best relief (subsequently added), to the greatest number of men, if the premises of the intended Dispensaries are well built, their management is properly secured, and the patients are regularly attended by skilful medical officers daily at proper times. ¶

Q. 3. Why do you think so?—**A.** Because there are objections on the part of persons of high caste, though poor to stay in a Hospital. They would go to Dispensaries to get medicines, and those who would have no objection might remain there.

Q. 4. Do you think many of such caste would remain in a Dispensary?—**A.** Many will, if they find regulations of the Dispensary good and the attendants are of good caste.

Q. 5. Do you think the cases of fever could be as well treated at a Dispensary as at a Hospital?—**A.** That will depend upon the physician.

Q. 6. Would it be more or less convenient, the buildings of a Dispensary not being so good as those of a Central Hospital?—**A.** The Native poor would not mind that,—there is no doubt that they would go to the Dispensary.

Q. 7. Do you not think that a pukka building well raised is more conducive to the cure of a patient?—**A.** Certainly, the buildings of the proposed Dispensaries must of course be built better than the ordinary homesteads of the poor.

Q. 8. Have you heard that there is a proposition on the part of the Council of the Medical College to unite the proposed Hospital with that Institution?—**A.** Yes, I have heard it.

Q. 9. What is your opinion as to the feelings of the Natives on that subject?—A. The Hindus of good caste would not go to any Hospital whether it be established in the compound of the Medical College or out of it, unless the wealthy and respectable Natives persuade them to do so.

Q. 10. Do you think then that uniting the Hospital with the College would prevent good caste people from going?—A. Those that would have no objection to go to a Hospital would in such case only object to the dissecting room, and they would perhaps think that the Institution was intended for the benefit of the pupils rather than the patients. This is however merely my own opinion, and I do not know that such objections will be raised by the patients.

Q. 11. If in case of the union the Professors of the College were to visit the patients with their pupils for the purpose of giving Clinical lectures, would that be objectionable?—A. If the students were to go to the bedsides in small numbers, say four or five at a time, there would be no objection, but if many went, the patients would think it was for the students' rather than their benefit.

Q. 12. We are not speaking of the rich. They must find their own medicine and physician—hospitals are intended for the poor,—do you think the union of the proposed Hospital with the College would be desirable for the benefit of the poor?—A. It is absolutely necessary—(subsequently added,) it is highly desirable that the Hospital should be connected with the College in order that the patients may have the benefit of being constantly visited by the Professors of the College.

Q. 13. For what reason? Suppose the plan of the union is adopted do you mean to say that it would be desirable for the sick poor, or do you think there would be a prejudice against it which would make them shun the Hospital?—A. Those that have no prejudice to go to a Hospital, will not think any thing about the union, and if the Professors attend to the sick at proper times, and no more than four or five of the students accompany them, then there will be no objection—(subsequently added), by this I mean that four or five students should attend the patients of high castes, while one hundred of them may visit a patient of an inferior caste at a time, as they have no such feelings, which the higher classes have.

Q. 14. Then would those who are prejudiced against Hospitals, be more prejudiced against the proposed Hospital if it is united with the Medical College?—A. If the higher classes persuade the poor they would make no objection.

Q. 15. You think then that the opinion of a prejudice against the union is a mistake?—A. If there is a wall to divide the two Institutions and a proper attendance is given on the sick, as I have before mentioned, there will be no objection.

Q. 16. What is the most unhealthy season of the year?—A. From August to November.

Q. 17. Under what complaints do the people suffer during those months?—A. Intermittent, remittent and bilious fevers, and dysentery and cholera.

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MoodosoodunGupta,
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Q. 18. What number of people do you suppose suffer from those diseases at that season?—A. About five hundred in each Thanna, including Bengalee, Mahomedans, Up-country people, and East Indians.

Q. 19. That will be upwards of 18,000 people?—A. Yes. But in some Thannas there are less, in others more, but the average will amount to the number stated above.

Q. 20. How many of them are severely affected?—A. The greater part.

Q. 21. Do you not overstate the number?—A. No, although the number appears large, the population of the native part of the town is great, even in poor families, there are twenty-five inmates in each house; I mean the total number in those four months.

Q. 22. How long do you suppose the fever usually lasts?—A. Sixteen to twenty days.

Q. 23. And for that time are they confined to bed and unable to work?—A. Yes.

Q. 24. Do the greater part recover and are able to work or do they remain sick for life?—A. The greater part recover and are able to work—some continue sick for life.

Q. 25. What do you think the best mode of affording relief to those eighteen thousand?—A. Of the number I have mentioned about one-fifth might without inconvenience purchase their own medicine. The remainder could not be accommodated in a Hospital. Dispensaries attended by qualified Natives, and supplied by beds for those who should wish to stay, would afford general relief. I would have one Dispensary in each Thanna or two Thannas, and one hundred beds in each Dispensary. I do not mean to say that the one hundred beds would be always full.

Q. 26. What relief do these people get now?—A. They purchase native medicine (Pauchun) and employ quack doctors (natives.)

Q. 27. What proportion of the sick dies?—A. Seventy or eighty out of the five hundred I have mentioned.

Q. 28. Do any of the Native Doctors who practise in Calcutta, understand anatomy or English system of treatment of diseases?—A. Not one of them.

Q. 29. But are there none amongst the Natives or East Indians who understand the European system of medicine and treatment?—A. There are about twenty-five East Indians and fifty Hindus and Mahomedans, who know the European system of medicine and treatment, (subsequently added,) who are little acquainted with European system of medicine and treatment. They are unable to prescribe, but they are good compounders.

Q. 30. Do those Hindus and Mahomedans know the English names of medicines?—A. Very well.

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Q. 31. Where were they educated?—A. In the late Medical Institution under Dr. Tytler.

Q. 32. Are they not employed by Government?—A. Many of them are.

Q. 33. Are you employed by any respectable Native family as Medical adviser, and do you make any money by your practice?—A. Yes, by several—Hulodhur Mullic, Ramgopaul Ghose, Kinnoo Roy and Singhee family. I am also employed by Bissonoth Motelall, but he employs an European Doctor besides. I get from twenty-five to one hundred rupees per annum from each of these families.

Q. 34. Do you ever attend at child-birth in the Hindu families and generally on women?—A. I do not attend at the child-birth, that is in the midwifery cases; but I attend on women if they are sick after child-birth and generally.

Q. 35. If you have to offer any suggestions on the subject of our enquiry, and would wish to put them on paper we shall be very glad to receive them?—A. I will put my sentiments more fully on paper for being submitted to the Committee.

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No. 66.

David Hare, Esq.
29th May, 1837.

DAVID HARE, Esq. *examined.*

Q. 1. You know as much of the natives, as any European, what do you think the best means of relieving the poor sick natives. Would a central Hospital or Dispensaries in different parts of the Town afford greater relief?—A. I think an Hospital is better than Dispensaries, because the latter cannot get proper medical attendance although the Dispensaries will be very useful in distributing medicines, in connection with it. I should prefer an Hospital.

Q. 2. What do you think of the plan of the union of the proposed Hospital with the Medical College?—A. I think it would be advantageous to the Medical College, and I think also very advantageous to the Hospital. I feel thoroughly convinced that the patients would be much better attended to than in any other Hospital that could be established in this country without a very large expenditure to secure the regular attendance of Medical gentlemen of experience.

Q. 3. What is your opinion as to the number of patients who would attend the Hospital. Dr. Goodeve estimates it at two hundred?—A. I think Dr. Goodeve's

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estimate correct, there would not be more until the manner in which the Hospital is conducted, is fully understood by the natives in general, when I suppose there will be a large increase.

Q. 4. Then would not Dispensaries be preferable, as they would afford relief to a greater number?—A. There should also be few Dispensaries in addition to the Hospital.

Q. 5. If there is no fund to establish both, which is the best?—A. It would be impossible to see the sick people at their own Houses or to get qualified persons to attend numerous Dispensaries. They would only be neglected.

Q. 6. You do not think the union of the Hospital with the College would alarm the patients?—A. In my opinion the situation of the Medical College is an excellent one for the Hospital, and I think the natives would have no objection to their being adjacent to each other, provided they are properly separated and due attention paid to the customs and prejudices of the natives, without which I am confident no Hospital will succeed.

Q. 7. Would the natives leave their homes willingly to go to the Hospital?—A. Many of them would I think, and the removal of poor natives from their own houses to more comfortable places is of great importance to the recovery of their health.

Q. 8. But a Hospital would not relieve so many as the Dispensaries would?—A. Certainly not so many, but it will relieve more effectually those who come and in a short time the students of the Medical College will be able to attend the Dispensaries, and the patients at their own houses. I think the Dispensaries would afford more immediate relief if attended properly; but I do not believe the medical men would attend to them.

Q. 9. If you have any suggestions to offer upon this subject perhaps you will have the goodness to put them on paper and send it to us?—A. I will do so.

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1st June, 1837.

No. 67.

Dr. William Graham,
1st June, 1837.

DR. WILLIAM GRAHAM, *examined*.

Q. 1. We believe you attend professionally many of the Natives both in town and suburbs?—*A.* Yes, many, as both my Native friends here could testify.

Q. 2. But you attend principally on the rich?—*A.* Both—rich and poor—whenever required by the latter I have never refused to attend.

Q. 3. What are the prevailing diseases amongst the Natives?—*A.* The prevailing diseases are cholera, bowel complaints, and fever.

Q. 4. What season of the year is most unhealthy?—*A.* After the rains; during the rainy months I consider that Calcutta is particularly healthy; sickness begins in September and October.

Q. 5. With what description of fever are the Natives generally attacked?—*A.* The Natives are subject to the same description of fever as Europeans; from August to November, there is much fever.

Q. 6. One of the Native Medical practitioners, named Modoosoodun Goopta, estimates that upwards of 18,000 persons suffer from diseases at the season you have mentioned: do you agree to his estimate?—*A.* I think it impossible to arrive at any accurate conclusion. I should say that the mortality in fever cases is small, from my own experience. In these months I have in the Tagores' family, taking the average of the last 16 years, 20 to 30 cases of fever in a year.

Q. 7. What disease do you consider most destructive to the Natives?—*A.* I regard cholera as the most appalling disease amongst the Natives.

Q. 8. What do you consider the best mode of relieving the sickness of the poorer classes of Natives?—*A.* I should consider the establishment of Dispensaries as the most efficient and humane. I think no other assistance of much avail.

Q. 9. What number of Dispensaries do you think requisite?—*A.* I think one Dispensary to two Thannahs would be sufficient (37 Thannahs.)

Q. 10. Do you mean Dispensaries with or without beds?—*A.* I mean with a receiving ward, as nearly as possible, resembling their own houses.

Q. 11. Have you any calculation of the expense of such Dispensaries?—*A.* None in particular; but it must be on an extensive scale. There must be an

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Dr. William Graham,
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European apothecary, a Hindoo and Mossulman doctor, and a Medical superintendent. I think most of the Medical men in Calcutta would give their services gratuitously. I think there would be no want of practitioners.

Q. 12. Do you think this a better mode of relieving the poor than a Hospital?—A. I entertain no doubt—I speak with confidence having been Assistant Garrison Surgeon at Fort William, I have seen when life might have been preserved, death occasioned by removal. Distance and exposure are great objections. In the Fort every assistance was given to remove them. In the native town, I look upon the removal as impossible.

Q. 13. Then you consider Dispensaries the best for the relief of the sick poor?—A. Undoubtedly.

Q. 14. What buildings would you think sufficient in a Dispensary?—A. I do not think puckah buildings necessary, mud walled and tile roofed huts would be sufficient.

Q. 15. Do you think that the Natives would object to going to a Hospital?—A. Yes, decidedly—separation from their families alone would prevent them from going to a Hospital.

Q. 16. You think their feelings in favor of Dispensaries?—A. I have questioned many; they all prefer Dispensaries.

Q. 17. Do you see any objection to the union of the Fever Hospital and Medical College?—A. If humanity is thrown overboard, I do not regard the situation as particularly favorable.

Q. 18. What do you mean by the expression of “if humanity is thrown overboard?”—A. The establishment near the College would deprive thousands of its benefit. If both are established good and well.

Q. 19. Can you suggest anything else on the subject under consideration?—A. To point out the advantages of Dispensaries I was looking over the report of 1818-19, when Cholera prevailed. The number of cases was about fifty or sixty thousand, and the mortality six per cent. It was remarked that no case recovered where medicine was not given,—taking the disease early, the treatment was successful,—Dr. Jameson’s report contains these particulars. The Native Doctors were under European superintendence. One or two native gentlemen have authorised me to say that they will give ground for Dispensaries.

Q. 20. Who are they?—A. The Ghosaul family at Kidderpore and Bissonauth Muttylohl in Calcutta.

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No. 68.

Dr. C. C. Egerton,
1st June, 1837.

DR. C. C. EGERTON, *examined.*

Q. 1. Have you much practice among natives?—*A.* Yes; the Eye Infirmary is filled with natives.

Q. 2. What number do you see daily?—*A.* The return to-day is 81 in-doors, and about 20 out-doors, each out-door patient takes three days medicine. We have a surgery in which the medicines are made up and operations performed. Beds are offered to bad cases, if refused, they attend as out-patients.

Q. 3. Have you considered the question of Dispensaries and Hospital as to affording the best relief to poor sick natives?—*A.* I do not see the distinction between a Hospital and a Dispensary with beds. The advantage of a single Hospital is the superintendence of the regulars of the profession. The books are regular and I could mention a singular occurrence. I saw evidence making a total of 18,000. One Dispensary alone cures 74,000. The advantage of Hospitals is that no irregular returns of this kind exist. Supposing a patient is seized with fever on Monday he is seen by the Apothecary at the Dispensary, and every dose given is entered as a fresh case. If a return of great number is wished, it can be had at the Dispensaries. I am anxious only about one set of people—the pupils of the Medical College. I take an intense interest in the success of the College, I consider that the pupils can only be made Surgeons by following our example. From seeing patients we go to the anatomical theatre and the dissecting room. We spend six or seven years of our lives in this, the natives must do the same, attending Dispensaries will do them only harm. The pupils would have no means of learning the nature of diseases.

Q. 4. We are at present only considering the object of affording relief to the poor sick natives. Would Dispensaries with beds relieve the poor effectually?—*A.* Yes, if properly superintended.

Q. 5. Are Dispensaries or Hospital most effectual?—*A.* I think a number of small Hospitals, well constructed, would be more effectual.

Q. 6. Have you means of supplying adequate European attendance to a number of Dispensaries?—*A.* No, certainly not. If it is wished to ascertain the use of Dispensaries at present in operation call for the returns.

No. 69.

R. S. Thomson, Esq.

No. 69.

To W. C. HURRY, Esq.

Secretary Municipal Committee.

SIR,

In accordance with the wish expressed in your letter of the 28th ultimo, that the Committee of the Trade Association should furnish your Committee with their suggestions, or a plan embracing the better regulation of the Municipal affairs of Calcutta, I am authorized to state their unanimous opinion, that the present method of assessment and disbursement by Government of the Municipal Funds, cannot but be unsatisfactory to the assessed, so long as they have no voice in the election of the public officers who control the levying and the expenditure of those funds—especially intended for the comfort and the safety of the inhabitants and the salubrity of the City of Calcutta.

With a view to placing the Municipal affairs of Calcutta on a popular and satisfactory footing, the Committee of the Trade Association beg respectfully to suggest—

1. That the Court of Quarter Sessions, be called into active operation as a Court of Appeal, as well as for sanctioning the levying of the Assessment and the controlling of all Municipal affairs.
2. That the Court consist of the Chief Magistrate as Chairman, and of all gentlemen holding His Majesty's Commission of the Peace as Members.
3. That the Court of Requests be considered as a Municipal Court and its Commissioners elected by the householders annually, to be eligible for re-election.
4. That the Police of the city be entrusted to the Chief Magistrate, four Police Magistrates, and a Superintendent, as at present, but to be elected annually by the householders, and to be eligible for re-election.
5. That the Conservancy of the city be entrusted to four Commissioners, to be similarly elected, with magisterial powers and summary jurisdiction in all matters relating to Conservancy affairs, subject to appeal to the Court of Quarter Sessions.
6. That the Assessment Funds, the Abkaree, the Lottery Fund, the surplus fines levied at the Police and Court of Requests, and any other local and Municipal Funds, be placed under the management of the Police and Conservancy Departments through the medium of a town receiver or treasurer, subject only to the control of His Majesty's Justices in Court of Quarter Session assembled.
7. That a Charter of incorporation be granted to the inhabitants of Calcutta empowering them to elect their own Magistrates, Commissioners, Deputies and Assistants.

8. That the city be divided into four divisions, subdivided into wards; each division having an Alderman, (or Honorary Magistrate) a Police Magistrate, a Conservancy Commissioner, a Deputy Alderman and an Assistant Commissioner, with suitable establishments.

9. The Police Magistrates and the Conservancy Commissioners to be paid,—the Aldermen, Deputies and Assistants to be honorary.

10. The election of the Aldermen, Police Magistrates and Conservancy Commissioners, to be submitted for approval to the Governor General in Council, who should possess a veto; which if exercised, a new election should take place.

11. The above named officers to be elected by householders, paying a monthly rent of Company's Rupees or upwards, or living in houses, their own property, of equal value.

12. That the Suburbs of Calcutta, from the lowest house in Garden Reach, to the highest house at Cossipore, two or three (or more) miles inland inclusive, be formed either into a separate corporation—or be joined to Calcutta, by extending the boundaries. Garden Reach, Allipore, Entally and Cossipore, might each form a division, as in Calcutta, with Aldermen, Magistrates, Commissioners, and, if necessary, Deputies and Assistants as in the city. The Suburbs, to be subject, of course, to Assessment, which would cover the Conservancy and nightly watch; but it would be necessary for the Government to grant allowances, to the Magistrates, if they were appointed and paid like the City Magistrates, but on lower salaries, say 500 or 600 per mensem.

If a plan founded on the above suggestions should be recommended by the Municipal Committee and approved by Government, the Committee of the Trade Association are prepared to enter more particularly into detail, as the subject has been frequently under their consideration; but they are not desirous, at present, to obtrude further on the attention of the Municipal Committee, nor until they are called upon to do so.

The Committee of the Trade Association beg to express their conviction that no difficulty would be found in inducing inhabitants, of the middling class of society for whom alone they speak, to exercise the liberties conferred on them of choosing their own Magistrates, Commissioners, &c. and of aspiring to such of the offices, whether honorary or paid, as they might be deemed eligible to fill.

I am requested to offer, personally, any further explanations of the sentiments of the Committee of the Trade Association, of which I am ex-officio Chairman, and to state that should evidence be further required, I can submit the names of persons qualified to afford the information desired.

I have the honour to be, Sir,

Your most obedient Servant,

R. SCOTT THOMSON,

Master, Calcutta Trade Association.

Calcutta, 10th May, 1837.

No. 69. A.

R. S. Thomson, Esq.

No. 69. A.

WM. COBB HURRY, Esq.

Secretary Municipal Committee.

SIR,

I have the honor to forward for the information of the Municipal Committee, the details of a plan for the Municipal Government of Calcutta, in furtherance of the suggestions respectfully submitted by a Committee of the Trade Association a short time ago.

That a change in the present system would be considered salutary, and that the public generally would support any plan which was grounded on popular election and gave the inhabitants an interest in the appropriation of the City funds, I am fully convinced from the sentiments expressed by the Members of the Trade Association and others.

The following resolution unanimously carried at a full meeting of that body gives assurance of their willingness to perform any duties that may be required of them, or to assist in carrying into effect any measures that Government may adopt for the improvement and advantage of the City.

“*Resolved.*—“That the Members of the Trade Association generally are
“fully disposed to co-operate in the measures now proposed for the establishment
“of a Municipal Government for the City of Calcutta, and they will individually
“be ready to devote a reasonable portion of their time to the fulfilment of any
“public duties which they may be called upon to perform.”

With regard to the eligibility of the electors being fixed at twenty rupees monthly rent, and upwards, the Trades Committee have been guided by the Assessment returns, also by the information they have received as to the qualifications and respectability of those parties generally so assessed. The annexed scale exhibits a list of about five thousand voters for the four Divisions of Calcutta, a number (it is presumed) amply sufficient for all the purposes of election and embracing all classes and creeds of the community.

That much good would result from dividing the Divisions of the City into Wards, and the appointment of Common Council-men over these Wards, the Trades Committee entertain no doubt; they are also of opinion that the utility of the Common Council-men would be much increased by investing them with the powers of special Constables; their constant residence in the Wards to which they belong would enable them to act with promptitude on emergency, in all cases where the preservation of the peace required their interference.

The Trades Committee have refrained from offering any opinion in the suggestions now humbly submitted for a Municipal Government, as to whether any alteration in the Police establishment might not be beneficially introduced.

No. 69. A.

R. S. Thomson, Esq.

It is not their wish to interfere with present incumbents should the Government feel disposed to adopt any change for the better regulation of the Municipal Funds, but they are convinced a very considerable saving would result from the inhabitants possessing a certain control over their disbursements as well as collection; that such items, for example as the "Town Hall" in place of being chargeable to the Government at an expense of 14,000 Rupees annually, ought, under proper management, to yield at least a considerable return.

The deficit in the annual revenue employed and collected for Judicial and Conservancy purposes as exhibited in Schedule (A) could not perhaps be avoided during the present incumbency, and it has therefore been respectfully suggested that Government should grant Lac of Rupees annually for five years to continue the efficiency requisite for these departments, during which period the Trades Committee are of opinion that the expenditure of the City could be brought within the limits of its income.

I have the honor to be,

Sir,

Your obedient Servant,

R. SCOTT THOMSON,

Master, Trade Association.

Calcutta, 29th June, 1837.

<i>Houses in</i>	<i>Rent below 20 Rupees per mo.</i>	<i>20 Rupees to 50.</i>	<i>50 Rupees to 100.</i>	<i>100 Rupees and upwards.</i>
1st Division	5,675	972		85
2d Ditto	3,659	872	Particulars of each division not given, only the total.	172
3d Ditto	1,317	451		271
4th Ditto	1,425	376		239
	12,106	2,671	1,056	767

No. 69. B.

R. S. Thomson, Esq.

No. 69 B.

From Trade Association.

IT IS RESPECTFULLY SUGGESTED—

1. That a Charter of Incorporation, in revival of the Charter granted by H. M. Geo. II. dated 8th January, 1753, be granted to the inhabitants of Calcutta, empowering them to govern and manage all Local and Municipal affairs of the City of Calcutta, in terms of the Charter.

2. That the inhabitants be authorized to elect annually as a Municipal Government,

- 1 Mayor or Chief Magistrate.
- 4 Aldermen (one for each Division.)
- 4 Deputies (Ditto.)
- 16 Councillors (one for each Ward or Sub-division.)

3. That to this body, to be denominated the Town Council, shall be referred the consideration of all Local Municipal affairs—with authority to hold Courts of Quarter Session, agreeably to the Original Charter granted to the City of Calcutta by His Majesty Geo. II. dated 8th January, 1753, as subsequently qualified by 13 and 14 Geo. III. and 9th Geo. IV.

4. That the Court of Quarter Sessions shall consist of the Mayor or Chief Magistrate, the Aldermen, the Magistrates of Police and such other Gentlemen as hold His Majesty's Commission of the Peace.

5. That this Court, as authorized by the above recited Acts of Parliament, do sanction the levying of the City Assessment for watching and warding and cleansing and repairing the streets, at such rate as they may deem necessary and fitting and agreeably to the Act 33 Geo. III. and also do hear appeals from the decisions of the Magistrates of Police, also appeals from the decisions of the Court of Requests, and from all other Local Courts or bodies authorized to appeal thereto.

6. That the Local Funds specified in Schedule A be placed at the disposal of this Court—who shall appoint a Treasurer or City Receiver—who may be the Accountant General or Sub-Treasurer, if deemed advisable by Government and this Court—otherwise such person or persons as this Court may appoint, upon suitable salary, and with sufficient securities.

7. That the Court of Requests as at present constituted be considered a Municipal Court and its decisions subject to revival by appeal to the Court of Quarter Sessions.

8. That a Board of Conservancy be established to consist of four Commissioners, *i. e.* one for each division of the City. The Commissioners to have Magisterial powers, with summary jurisdiction in all matters relating to Conservancy affairs—subject to appeal to the Court of Quarter Sessions.

9. That the Police of the City, as at present, be intrusted to a Chief Magistrate, and four Magistrates—*i. e.* one for each division of the City, with the aid of a Superintendent and suitable establishment.

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10. That the Suburbs of Calcutta from the lowest house in Garden Reach to the highest house at Cossipore, two or three (or more) miles inland inclusive, be formed either into a separate corporation—or be joined to Calcutta, by extending the boundaries. Garden Reach, Allipore, Entally and Cossipore, might each form a division, as in Calcutta, with Aldermen, Police Magistrates, Commissioners, and Deputies as in the City. The Suburbs to be subject, of course, to Assessment, which would cover the Conservancy and nightly watch; but it would be necessary for the Government to grant allowances to the Magistrates, if they were appointed and paid like the City Magistrates, but on lower salaries, say 500 or 600 per mensem.

RECAPITULATION.

The business of the City will thus be managed in five Principal Courts.

1. The Town Council, the functions of which will be principally deliberative; and in which all alterations, improvements and suggestions, in Municipal affairs, will be primarily considered.

2. The Court of Quarter Sessions, as Judicial Court of Appeal, in which the Mayor or Chief Magistrate will preside.

3. The Court for the Recovery of Small Debts, in which three Commissioners divide the duties between them.

4. The Board of Conservancy, consisting of four Commissioners, subject to the Town Council.

5. The Police Office, with a Chief Magistrate and four Magistrates of Divisions.

An appeal lying from the three latter to the Court of General Quarter Sessions.

The City being divided into four divisions and each division into four (more or less) Wards—besides the Mayor, the Chief Magistrate of Police and the Chief Commissioner of Conservancy—there will be to each division an Alderman, a Police Magistrate, a Conservancy Commissioner and a Deputy Alderman, with establishments as specified in Schedule B; also for each ward of each division, a common Councillor who will act in his ward, as will the Deputy in his division, in all elections and in the conservation of the peace—in aid of the Alderman, the Police Magistrate and the Conservancy Commissioner.

It is suggested that the Mayor or Chief Magistrate, the Aldermen and the Commissioners of Conservancy and of the Court of Requests, as well as the Police Magistrates, should be Justices of the Peace. That the Deputies of the divisions be sworn in as Chief Constables thereof and the Councillors be all constituted special Constables—but, of course, to be required to act only on emergent occasions.

That the Petty Court Jail, the House of Correction and all lock-up houses be, as at present, under the Chief Magistrate. The Mayor and Aldermen being

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at all times at liberty, and periodically required, to visit the same and report upon their state to the Court of Quarter Sessions.

That there be in each division of the Town, an office in which the business of the division and its wards shall be transacted. The Alderman of the division to be the head thereof, with the assistance of his Deputy and a Chief Clerk, on such salary as may be deemed sufficient for the duties to be performed. The Conservancy business of the division to be also transacted in this office and generally all ward or division meetings, held therein.

If the Government of Bengal place at the disposal of the Town Council, the funds specified in Schedule A, with a grant of one lakh of rupees per annum for five years the Council will undertake to meet all the expenses specified in that Schedule and provide ways and means (if empowered) to supply any deficit, without calling on the Government, or abolishing any existing establishments, except such as may be found useless—without affecting the incomes of incumbents, whose salaries shall remain as at present. Provided always that performance of duties may be assigned to sinecurists, and that all persons employed in subordinate situations shall, as at present, be liable to dismissal for misconduct.

ELECTIONS.

The election of all Officers, viz. Mayor, Aldermen, Magistrates, Commissioners, Deputies of Divisions and Councillors for Wards should, it is considered, on principle, be annual, by ballot. If this be objected to, then it is suggested that the Mayor, Aldermen, Deputies and Councillors only be so elected, being eligible for re-election; while the Police Magistrates and paid Commissioners be appointed for life, subject to removal by petition to the Court of Quarter Sessions, in certain cases to be specified.

The electors to consist of all householders, of whatever color or religion, occupying houses paying a rent of 20 rupees per mensem, or living in houses their own property or the property of other persons, of equal value, as per Assessment returns.

The qualification for Tenants to be the production of a Landlord's or Agent's receipt for rent, for a period of at least three months next preceding the date of the election—and not more than two months in arrear. Persons residing in their own houses, or by permission in houses of others, to prove this fact before the Alderman of the Ward or his Deputy or other appointed Assessor.

The mode of election to be as follows :

1. A registered list of voters to be supplied by the Commissioner of the division and to be kept in the office of the Alderman of the division, and on an appointed day all persons included in that list to be at liberty to vote in person for any candidate who may have intimated his intention to stand a ballot for the vacant, or about to be vacated, office. The votes to be examined by Scrutineers, and publicly declared and recorded at the hour fixed for closing the ballot. Proxies not to be admitted.

2. The time and place of ballot, and the names of candidates, to be publicly announced at least ten days prior to the day of election.

CITY OF CALCUTTA.

SCHEDULE A.

No. 69. B.

R. S. Thomson, Esq.

Annual Income and Expenditure.

	<i>Income.</i>	<i>Expenditure.</i>
Court of Requests,	55,878	80,417
Assessment (A),	2,24,500	2,42,638
Police (B),	0	3,21,728
Abkurree,	1,46,700	10,100
European Distilleries,	22,000	12,900
Lotteries,	39,600	20,994
Town Hall,	0	13,729
Chowringhee Plain,	5,000	0
Fees, Fines and Escheats, &c.,	16,800	0
Convict Labor,	16,404	13,313
Total	5,26,882	7,15,819

(A) Conservancy (Assessment)—

Establishment,	43,856
Contingent,	39,659
Repairing Roads,	49,615
Cleaning,	73,891
Repairing Bridges and Drains,	8,317
Charges of Collection	27,300
	<u>2,42,638</u>

(B) Judicial (Police)—

Magistrates' Salaries,	1,00,000
Different Establishments,	41,175
Contingent,	28,512
Thannadaree,	1,43,899
Rent, &c. &c.,	8,142
	<u>3,21,728</u>

SCHEDULE B.

Additional Division Expenses.

4 Conservancy Commissioners,	400	1,600
4 Chief Clerks,	150	600
4 Houses for Office,	150	600
4 Writers, &c.,	50	200

Per Month,3,000

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SCHEDULE C.

Town Council Expenses.

A Secretary,	300
A Clerk,	100
Writers, Stationery and Petty Expense,.....	100
	<hr/>
Per Month,	500

A Treasurer (if required) commission one per cent.

N. B. The expenses of all existing establishments to be as at present, or subject to the recommendations of the Municipal Committee.

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James Young, Esq.
27th July, 1837.

No. 70.

27th July, 1837.

JAMES YOUNG, Esq. a Member of the Committee, examined.

Q. 1. You hold the office of the Clerk of the Peace we believe?—A. Yes.

Q. 2. How long have you held it?—A. Nineteen months.

Q. 3. Who was your predecessor?—A. Mr. Smoult.

Q. 4. How long did he hold the office?—A. A number of years. I think 14 or 15 years.

Q. 5. What is the salary of the Clerk of the Peace and whether the charge is defrayed from the local fund?—A. The salary of the Clerk of the Peace as well as his establishment, are paid direct by Government and do not form any part of the Police charges. The salary is two hundred and fifty Sicca Rupees per month, equal to Company's Rupees 266 10 8, and before my time the establishment was—

1 Writer,	104	8	0
1 Mollah,	5	3	7
1 Brahmin,	5	3	7
3 Peons,	12	8	8
1 Duftory,	5	3	7
Fixed allowance for Stationery,.....	20	14	5
Crier,	33	5	4
	<hr/>	<hr/>	<hr/>
	186	15	2

Total Company's Rupees 454 9 10

When I came into office I reduced the whole establishment, with the exception of Company's Rupees 104-8, which I considered sufficient for the pay of one writer

and one peon, as well as for providing Stationery, &c. This reduction has effected a saving of Company's Rupees 82-7-2 per month, or about a Thousand Rupees a year, consequently the present salary and establishment amount to Company's Rupees 371-2-8 only.

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Q. 6. Have you any allowance for house or office rent?—A. No; I have built up a room at my own residence as my office and purchased furniture, record presses, &c. for it. There were no proper places for the records, which were in great disorder.

Q. 7. What is the average amount of fees received by the Clerk of the Peace besides salary?—A. In seven years there have been 7,030 petitions for reduction of Assessment on Houses (of which class alone I have taken any account) forming an average :

Annually,	1,004
Quarterly,	251
Monthly,	83½

One Sicca Rupee is authorized by the Bench of Magistrates to be levied on every such petition (*copy of the proceedings of the Bench of His Majesty's Justices of the Peace in Sessions in 1806, fixing the table of fees for the various business in the Clerk of the Peace's Office submitted.*) I reduced this, on being appointed, to one Company's Rupee, so the total value of the office to me may be taken at about 350 Company's Rupees per month, supposing these fees to average as heretofore.

Q. 8. What are your duties?—A. My office is mainly one of record for the proceedings, accounts and vouchers of the Justices in Quarter Sessions now confined almost entirely to fixing and altering the rates of Assessment under the Act of Parliament and hearing appeals against the Assessors or Collector. The Chief Magistrate submits through me all the accounts of Disbursements prepared by the Police Accountant, with all the vouchers for audit, which I forward to the Civil Auditor who after examination and audit returns them to me, I then send them back to the Police Accountant to examine and pass to credit, or if any of the charges are objected to, those must be discussed by the Bench and Auditor, which however is seldom the case. The accounts and vouchers are then finally lodged with me and become office records. In like manner I receive and record the Collector's Accounts. The Sessions formerly used to be held once a year; but of late years have assembled quarterly, and I attend at the opening and closing of each Sessions. I receive and record during the fortnight after opening each Sessions all appeals or applications for abatement of Assessment, communicate their contents to the Assessors, in order that they may, if necessary, examine disputed premises, and be prepared to defend their Assessments, &c., at the sitting of the Magistrates for hearing these petitions which takes place every Saturday till all are decided. I give numbered receipts for each registered and docketed petition and furnish information to the petitioners when to attend, and in case of their neglecting to attend, of the decision which the Magistrates have come to on these petitions, if such information is sought by absent petitioners—each of the Assessors delivers to me at each Sessions for my office sets in dupli-

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cate of his two Books of Assessments for the two Divisions of which he has charge, in all eight books, one copy of each book approved, signed and sealed by the Magistrates remains in my office as a record, and the other copy being authenticated by me is forwarded to the Collector of Assessment for his guidance. Two sets of alteration books are delivered in by the Assessors at the end of each Sessions after the decision of the Bench on the appeals of the quarter, which are compared with the original Assessment Books and alteration therein inscribed, until corrections and alterations become so enormous as to require new Assessment Book to be made out. The entire proceedings of each Quarter Sessions are recorded in a voluminous document of 6 or 8 skins of parchment which contains particulars of every reduction in Assessment granted in appeal during the Quarter, which document is signed and sealed in my presence by the Magistrates present at Sessions and becomes a record of the office.

Q. 9. What portion of your time is occupied in performing these duties?—

A. Formerly there was but one General Session, latterly the Sessions have been increased to four ; at the opening and closing of each of which I always attend, besides occasionally when required on petition days, now it is proposed by the majority of the Magistrates, though considered irregular by others, to open a new and close the old Session on the same day which will reduce the number to four. But the office is in fact essentially one of mere registering and recording and requires very little personal attendance out of doors on my part, who am in truth little more than a Registrar or Record-keeper.

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27th July, 1837.

No. 71.

C. B. Greenlaw, Esq.
27th July, 1837.C. B. GREENLAW, Esq. *examined.*

Q. 1. How long have you held the office of Coroner?—A. Since 1821.

Q. 2. Who was your predecessor?—A. Mr. Dent.

Q. 3. How long did he hold the office?—A. I think five or six years.

Q. 4. Had he any other occupation?—A. I do not know.

Q. 5. What is the average number of Inquests held during the year?—A. I cannot now speak by average ; but the maximum has not exceeded 24 cases in a year.

Q. 6. Will you give us a return of all the cases brought before you for a number of years?—A. I will do so.

Q. 7. What is your Salary?—A. Three hundred Rupees per month, besides two hundred and fifty Rupees per month for house and office rent, and 176 per month for establishment, including stationery, printing, &c. and 24 to 30 Rupees per month allowed for conveyance allowance for which I keep two horses.

The house and office rent was added to the salary at my own application to enable me to have a house near the Police office for the convenience of the Jury.

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27th July, 1837.

Q. 8. Do you hold Inquests at your house?—A. Yes, the body being first inspected by the Jury, they adjourn to my house and the Inquest is held there.

Q. 9. How many persons are employed under you?—A. I will send you a return of the establishment.

Q. 10. What portion of your time is occupied in the discharge of the duties of Coroner?—A. I will also submit a memorandum of the time occupied.

Q. 11. Do you hold any other appointment?—A. Yes, I hold the appointment of the Secretary to the Marine Board. I took that office with the distinct understanding that the duties of Coroner are not to be interfered with, I held the appointment of Coroner previous to that of the Secretary to the Marine Board.

Q. 12. How long have you held the appointment of the Secretary to the Marine Board?—A. I was appointed Assistant Secretary in 1825 and Secretary in Feb. 1828.

Q. 13. What is your salary as Secretary to the Marine Board?—A. Twelve hundred Rupees per month, I had the same allowance when I was Assistant Secretary, viz. a salary of eight hundred Rupees per month as Assistant Secretary, and four hundred Rupees more for conducting some other Government business connected with the Burmese War.

Q. 14. Your salary is paid by Government and forms no part of the disbursements out of the Municipal Fund?—A. The Coroner's establishment is audited by the Civil Auditor and paid by Government; besides the establishment some contingent expenses are incurred as fees to Constables at 2 Rs. per day, &c.

Q. 15. Will you give us a statement of the whole disbursements of your Establishment?—A. I will do so.

Q. 16. Do you find any difficulty in obtaining a Jury?—A. No, not so much now. The difficulty of obtaining Juries diminished since East-Indians were included in the Jury list.

Q. 17. Did you ever summon Hindus and Mussulmans on the Juries?—A. I attempted to summon Hindus, but did not succeed. My summons are required to be served personally and I cannot so serve them at the time a Jury is wanted, as I could not get to them at their residences mentioned in the Jury list. I never summoned Mussulmans.

Q. 18. Then it would seem desirable that the Sheriff should be directed to ascertain and insert in the Jury list the places where the Natives are employed?—A. Decidedly so. I wish to observe that my duties as Coroner are not only holding Inquests but also receiving and recording notices of all deaths and casualties and granting at my discretion permissive Warrant to dispose of the body without an Inquest being held.

Q. 19. Will you give us a memorandum of all the duties you have to perform as Coroner?—A. I will give a list of those duties of the last five years.

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Q. 20. Do you hold Inquests on all deaths in Jail?—*A.* Inquests are not held in Jail in regular form; but only when from enquiry it appears necessary.

Q. 21. Do you remember having held an Inquest on the body of a prisoner in the late piracy case, who was supposed to have been poisoned?—*A.* I don't know the case alluded to, but I believe I held an Inquest on a person confined in Jail on a charge of piracy supposed to have been poisoned. (*Submits a copy of a Notice given by the Superintendent of Police on an occasion of sudden death.*) I have derived very great benefit and assistance from the present Police Establishment since the appointment of the Superintendent of Police, and the Thanadaree Establishment is much more trustworthy now, than formerly.

Q. 22. Who performs the duties of Coroner in your absence?—*A.* No person can perform the duties in my absence unless appointed and sworn by Government.

Q. 23. Is the Coroner appointed by Government?—*A.* My appointment is from Government and they have the power to appoint as many Coroners as they wish throughout Bengal, Behar and Orissa. I beg to observe that to pay the Coroner by fees would not be a good plan. It would lower the respectability of the office and it would induce him to hold useless Inquests.

Q. 24. But his Bills may be checked by Quarter Sessions. In England Coroners are paid by fees?—*A.* Yes—but no respectable person would undertake the duties on such terms in this Country.

Q. 25. And yet in England the office is eagerly canvassed for?—*A.* True, but there they have motives which do not operate here.

Q. 26. Do you ever perform the duties of the Sheriff?—*A.* Yes, occasionally, when the Sheriff is a party to the suit it is a rule of Court to direct process to the Coroner. I think there would be no objection to the remuneration by fees if the office is attached to some other office of respectability such as Police Magistrate.

Q. 27. Do you know any instance of a Coroner being Justice of the Peace in England?—*A.* No. In this country the great difficulty in getting Juries, is from the shortness of the time for disposing of the body. I think the view might be taken by the Superintendent of Police, Police Surgeon, and Coroner; but this must be done under a change of the law.

Q. 28. Would a smaller Jury diminish the present difficulty?—*A.* A smaller Jury say to the number of six would be easily collected. There is no difficulty except of time; when Juries are collected they execute the duty very willingly and never complain of protracted sittings. In the case of the late Mr. Barry the Jury sat ten days without complaint.

Q. 29. Do you furnish them with refreshments?—*A.* Yes with slight refreshment, bread and occasionally cheese with brandy and water at my own expense. I provide them also (with a view to expedition) with conveyance to the place of inspection. I keep two Carriages, a Landau and a Palkee Carriage, the latter in a great degree for their accommodation. A rupee is allowed by Government for conveyance when demanded by the Jurors.

No. 72.

31st August, 1837.

D. McFARLAN, Esq.

No. 72.

D. McFarlan, Esq.
31st August, 1837.

A Memorandum by the Chief Magistrate on Taxation.

As a preliminary enquiry to the imposition of new taxes, it was imperative that the economical administration of the old should be clearly shewn.

The enquiries of your Committee consequent on this have obviously embraced a wide field. The Abkaree or Liquor Tax, the expenses of the Police which belong more especially to Government, and the expenses paid out of the Assessment, have passed under your able and searching enquiry. It will be seen, I presume, that the Abkaree may be made more productive, and the Government share of the Police expense may be considerably reduced. Some small reduction will doubtless be made in the Assessment charges, and though the aggregate cost of the whole Police machine will be considerably reduced, the part of the reduction that would fall to the share of the Assessment or the People's Tax will, I presume, be small.

For the purpose of ascertaining what sums the People should be called to pay it is obviously quite essential that they should know what will be paid for them. I conclude that the following estimate of the distribution of charges would be near the mark :

Government will pay.....	114,532
Town will pay	313,241

On the present scale the expense, particularly the Town's, would be 313,000. This the Assessment could not provide.

If the Abkaree is thrown into the fund, we should have a surplus: if it is not we should have a deficiency of Rupees 113,000.

I presume that if it were given to the Town the inhabitants would be required to find their own Magistrates and Establishments of every sort.

On referring to the series of printed papers published at various times by me, (see figured statement appended to my letter to Government of 1st December, 1833,*) the payments by Government under the head of Sitting Justices amount to Rupees 206,604: the receipts from Abkaree to Rupees 173,886.

* Vide page 12 of
accompanying pam-
phlet.

If Government gave up the Abkaree and the above payments *also*, it is obvious that the Town with all practicable reductions would be but small gainers.

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31st August, 1837.

Let us presume however that Government will continue to discharge the expense immediately required for the due administration of justice: that is, about 200,000 or less, mentioned under the head Sitting Justice's Account, and would retain the Abkaree: then the Town would have to make good 3,20,000. Of this they have from the Assessment about 200,000, then 1,20,000 would have to be supplied to keep up the expenditure now incurred.

Who should supply this deficiency is not I hope a matter of question. Many there doubtless are who would be willing to ask the Government to pay all, and who sink all questions regarding the improvement of the public feeling of Towns in a desire to avoid trouble and increased taxation, but it is the duty of the Government to endeavour to lead the people into an healthier tone of feeling, so that they may scorn, like paupers, to accept of benefits they do not pay for, and may consider every improvement in Conservancy as their own, and in one word to have an "adequate local taxation and independent local management in the direction as in the burdens of which all who might be most interested should take their share."

Concluding therefore that the most important question for your Committee to consider is the means of raising adequate funds to carry on and improve the Conservancy, the watch and ward, and general Police of the Town, I will address myself to that question.

In my evidence given before your Committee on the I mentioned that Calcutta might be divided into three Sections.

* Bounded on the North by Mutchwa Bazar, South Dhuruntolla, East Central Road, West River.

In regard to these different Sections I think that very different modes of treatment should prevail. In the Centre* Division we want good roads, good drainage and sewerage, good lighting and watering, and great improvements in the opening up of wide roads. In the other portions these matters are not only of less importance, but the means to meet the expence is wanting. By a return of the Assessors appended to this, it appears that nearly half of the whole Assessment of the Town is levied within this centre limit, though the space is not quarter of the Town. I would secure therefore for this division the whole of the House Assessment collected in it, and levy whatever was wanting for watering and lighting, first by additional Assessments not exceeding $2\frac{1}{2}$ per cent. beyond what is now obtained.

* Vide page 29 of accompanying pamphlet.

In regard to the other divisions the only item they are likely to demand would be watering, and it may be the making pukka and covering over the main drains that traverse them. For them I would propose the draft appended to my printed letter to Government of the 5th February 1835* for watering certain streets or levy from these divisions by increase of assessment whatever was necessary for keeping them in the state in which they now are.

As the least objectionable mode of raising an additional fund I would propose a tax upon carriages, and perhaps horses, the proceeds of which should be applied to the maintenance and repair of existing roads and the construction of new ones. No tax can be fairer than this. Under it the poor who wear out but a small fraction,

if any of the roads, escape all payment, and the affluent pay no more than they enjoy the benefit of. A toll to make persons residing out of the limits of the town pay for a benefit enjoyed would be necessary.

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31st August, 1837.

This tax could I doubt not easily be made to produce 1,20,000 rupees. The expenditure upon the roads need never exceed 50 or 60,000. A fund would thus be left for the construction of new lines where most required.

I trust the Lotteries will be done away with as soon as their debt is paid or even sooner. I would not trust to them as a future source of income; in regard to them I fancy there is little difference of opinion. Gambling sanctioned by the State is not likely to stand long in the face of enlightened public opinion.

I know of no other feasible tax. An impost on shops has been suggested. Manifest evils are apparent in such a tax. Would Messrs. Hamilton and Co., the Jewellers, pay the same as the poor native grain seller? Tiretta Bazar is a great shop: it perhaps would pay no more than Mr. Twentymen the Jeweller. To make such a tax fair we must know the goods sold and their value which we could never learn and if we could, the labour of adjusting the tax would be infinite.

I have heard a proposal to take the tolls of Tolly's Nulla and the Circular canal, and apply them to purify the drains of the town. It seems quite plain that every farthing which we levy on the canals beyond what is sufficient to keep them in proper order and it may be to pay the interest of money laid out on their construction, should immediately be reduced. To raise a revenue by tolls is wrong, to apply that revenue to the ease and comfort of the wealthy inhabitants of Calcutta is worse. The staple transit of goods is wood and rice which are consumed by the poorest. Every rupee of canal money laid out upon our drains would be gathered from the labour of the poor, and it would unquestionably be given to gratify the wishes and desires of the rich not the poor. The charcoal of the rich comes from the westward and the little grain they eat from the Upper Provinces.

If the tolls are applied to conservancy purposes would not Bullya Ghaut, Tollygunje and other similar populous villages have to the full as good a claim as Calcutta? If distributed over so large a tract what would the benefit amount to?

The grant of the tolls by Government would trench upon the great principle which ought never to be lost sight of. The people of the town would not feel that it was their own money that was distributed and could not claim the management of it.

NOTE.—At Bombay they have a Tax called "Market Fees, on shops and stalls, on beating the Battakee (Tom Tom) or country music, and on the erection of wedding sheds and other places of public amusement." All of these look more like what some inferior officer would illegally exact than an impost sanctioned by Government.

NOTE.—At Bombay they have a long list of rates to be paid by the different kinds of shops: Europe shops, such I suppose as Moore, Hickey's pay 5 Rupees per quarter: Fowl sellers about 5 Annas. The heart burnings arising from a tax so unequally and capriciously adjusted, must, I think, be very great.

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31st August, 1837.

A tax on carriages and land tolls, and increase of house assessment, appear to be the sources from which the existing deficiency must be made up and additional funds provided, and I hope that with due economy in their administration they might be made to answer for all that the town actually demands.

What these demands are is the next important point. What is asked for in clamour and in ignorance of available means ought to be put on one side. The grand point is not what the citizens would like to have, but what they would pay for having. To ascertain this fully and effectually is hopeless at present. It can never be done till elective committees on a wide basis are formed, and I think they would soon be formed if Government were to take the initiative and impose a new tax.

I have heard it suggested that Government should carry into effect in the town of Calcutta every sort of improvement without regard to expense in order to shew to an Asiatic population what an European city is. This is surely a fanciful notion. The inhabitants of the other towns of India would not be much the better for this knowledge unless endowed with the privilege of having the same done for them, and if Calcutta is not able to command that power within herself, it is not likely that other towns would. They would thus have a notion made manifest to them at an enormous expense to Government, and in the mean time the Calcutta people, the subjects of this experiment, would become the spoilt children of Government thrown greatly back in their progress to free, vigorous and manly institutions.

It is proposed I see by one gentleman to make the elective heads of a neighbourhood Police officers and conservators. Any such plan would be a failure. The functions of committees, town councils, or whatever name they have should never extend beyond that of having full access to accounts of expenditure and the returns of crime and the election of executive officers. They should deal only with general results. They might as well be masons to construct their drains as Police officers to apprehend their thieves.

In their commencement, their functions should be limited as proposed in my printed letter of March 1st 1835.

(Signed) D. McFARLAN, *Chief Magistrate.*

Calcutta, Police Office, 31st August, 1837.

Statement of the amount of assessment of such premises of the City of Calcutta as are situated within the following boundaries, viz. on the North, Cotton Street and Machooa Bazar—South, Esplanade and Durrumtolla—East, College Street and Wellesley Street—West, Strand Road.

	Valuation per Mensm.			Tax per Quarter.		
2d Division Company's Rupees...	1,00,760	11	8	15,111	13	2
3d ditto.....	1,10,870	14	11	16,630	1	1
4th ditto	7,253	9	9	1,008	0	0
Total.....	2,18,885	4	4	32,749	14	3
Total of the whole Town.....	4,41,611	8	4	66,241	11	7

No. 73.

No. 73.

J. R. Martin, Esq.
17th December, 1837.

J. R. MARTIN, Esq.

NOTES

*Written in consequence of a perusal of Mr. Secretary Mangles' Letter
to the Chairman of the proposed Fever Hospital Committee.*

1st. It appears to me, that the Committee stands pledged to the subscribers and the public to establish *an hospital* for the accommodation and cure of persons labouring under the more prevalent acute diseases of the place.

2d. That in setting this object before the public, and calling for subscriptions, the Governors of the Native Hospital in their address to the public dated in May 1835 again pledged themselves "not to encroach upon the constitution of the Native Hospital, but that the proposed institution is to be essentially a separate one both as regards its funds and the rules by which they are to be administered." This quotation will I trust satisfy the Committee on two points, viz. that the Committee stand pledged to establish a Fever Hospital, and also, that if they succeed, it shall be separate and distinct from the Native Surgical Hospital.

3d. On the subject of the difference in the nature of the relief afforded by the two kinds of institution,—an Hospital and a Dispensary—I beg to quote from my note to Mr. Mangles, of the 3d ultimo, wherein I have said that, "Without the aid of an Hospital in a city like this, fever and dysentery cannot be cured: every thing in it is necessary to save life; the regular visits of an European Doctor, aided by an intelligent establishment; its open airy wards and raised clean beds; its regulated diet and clothing, and its general cleanliness, these are all necessary. But in a Dispensary, which is only useful to keep men out of Hospital (no small matter in itself) the patient gets his dose of medicine and is cured; or if not, he returns to the very place where he caught his disease, to sleep on the damp ground, to get medicine by chance, and to have any diet or clothing the friends choose, together with the absence of all ventilation and cleanliness. In violent illness therefore, such management can be of little avail in arresting disease. Again, it is not, even in the most dangerous diseases, by medicine *alone* that a man's life is to be saved, but by the careful and continued watching of the operations of nature, and those of medicine, so as to determine when to give and withhold drugs. It results from this that Dispensaries take but a secondary or subordinate station, and cannot be compared in active relief to a well ventilated and regulated Hospital." Speaking as a medical man, and viewing the question as it affects the public health, I should feel that I conferred a greater benefit on humanity in one case of acute disease restored to health in an Hospital (where alone such cases can be treated) than by many scores of cases of doubtful relief afforded through the casual exhibition of doses of medicine at a Dispensary.

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J. R. Martin, Esq.

4th. On the subject of attaching a fever ward to each Dispensary, I shall only observe that such arrangement is not within the plan proposed to the public. I may, however, add that such rooms, unless the positions of the Dispensaries be altered, must prove defective in some of the most essential requisites for the proper treatment of disease: viz. freedom from crowding, openness, and freedom of ventilation; for without these, the best medical advice and medicine can be of little or no benefit; indeed, it is doubtful whether an Hospital in a crowded portion of the town would not be an evil in place of a relief to humanity, so paramount is an open and airy locality.

5th. I shall look forward with anxious but high expectation to the time when, as his Lordship points out, the services of well educated natives may be available for the purposes of Dispensaries, and for offices even of a higher order; indeed, it was one of the earliest advantages stated by me when I brought the subject first before the Governors of the Native Hospital. I stated as one of the advantages of a Fever Hospital that it is in such an institution "alone they" (the students) "can ever acquire the practical knowledge which can render them generally useful." Nothing like the benefit here spoken of can be derived, or is ever derived in Europe, through the attendance of a youthful student at a Dispensary: because the duties of a Dispensary require experience, and that, as I stated before, can alone be acquired in the close observation of treatment, an attention to clinical instruction, and an attentive perusal of the regular diaries of an Hospital: the Hospitals, both Medical and Surgical, are the great, and almost the only schools of practical medicine and surgery in Europe. We are officially called Surgeons; but we find, in Indian practice especially, that we are in reality Physicians. It is on our knowledge of the two grand divisions of tropical disease,—fever and dysentery, with their sequelæ,—that nine-tenths of our usefulness depends. All professional men will I think agree with me in this declaration, and that it is in an Hospital that we can alone, in the first instance, acquire this knowledge to be useful.

J. R. MARTIN.

Native Hospital, December 17, 1836.

No. 74.

S. NICOLSON, Esq.

No. 74.

S. Nicolson, Esq.

NOTES

Written in consequence of a perusal of Mr. Secretary Mangles' Letter to the Chairman of the proposed Fever Hospital Committee.

I have repeatedly perused the letter of Mr. Secretary Mangles, addressed to our Chairman, with very great attention. And shall now proceed to make a few observations on such parts of its contents, as I may be considered competent to give an opinion upon.

“Paragraph 3d. His Lordship would gladly have seen consideration given to the advantages, to be derived to the general care of health, and particularly for watching the approach of epidemic fever, and providing means of general relief, in case of its prevalence, from the establishment of one great Hospital, as compared with the benefits which would be afforded at the same expense, by an increased number of Dispensaries.”

I think there can be no question as to the superiority of a large Hospital for the accommodation of fever and all other medical cases, for the purposes mentioned in the above paragraph over any number of Dispensaries, strictly speaking; but the expense of the former would necessarily be much greater. In advocating the establishment therefore of a large Hospital for medical cases, I am not opposed to the establishing of Dispensaries. On the contrary, I am of opinion that as soon as an Hospital is provided, Dispensaries should be established in several parts of the town, and particularly in the populous suburbs around. These should be strictly speaking Dispensaries, to afford advice and medicine to all applicants. As a large proportion of those who would apply to those Dispensaries, would be of the poorest and lowest classes, many of them strangers, and without friends in Calcutta; who have no property, save the few rags in which they are partially clothed, and no other means of support save the earnings from their labour from day to day, it is evident they could derive but very little benefit from a Dispensary when labouring under an acute disease. They might indeed apply once or twice, be able to walk the first day; probably contrive to be carried the second; but as the disease advanced, and their strength failed; their means of conveyance exhausted; and their scanty remains of food drained to the dregs; they must inevitably perish from disease or starvation, unless some considerate Chokeedar should take pity upon them, and have them conveyed to the Police Hospital. It is for the reception of this very numerous class of the inhabitants of Calcutta and the suburbs when attacked by acute diseases, that I consider a Fever Hospital so urgently required. And I feel satisfied that thousands of lives would be saved annually by the establishment of such an Hospital, with a certain

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number of Dispensaries subordinate to it. These Dispensaries might I think be maintained at much less expense than the two now existing, subordinate to the Native Hospital, (which by the by were originally established experimentally.)

When an applicant to any of these Dispensaries is found labouring under an aggravated form of acute disease; the medical person in charge should be instructed to institute an inquiry into the patients circumstances, and if he is ascertained to have no friends, and little or no money, he ought immediately to be forwarded in a Dooley, provided for the purpose, to the central Hospital, there to remain till cured.

It is believed, that an Hospital such as that above alluded to, provided with a sufficient number of moderately sized wards, for different forms of disease; also with the necessary number of servants, attendants, and medical officers will be found infinitely more efficient, more really useful, and more in accordance with the demands of Calcutta, in its present utterly unprovided state as regards the sick poor, than the addition of a few beds, to any number of Dispensaries.

Moreover, I am inclined to believe, that the expense of such an establishment as I have above alluded to of an Hospital and numerous small subordinate Dispensaries, would not greatly exceed the cost, house rent, maintenance of establishment of properly qualified servants and medical men, of a number of Dispensaries, with small Infirmaries attached to each.

In other words I am of opinion, that for all the purposes stated in the above paragraph, one large central well provided Hospital, would meet the pressing necessities of the indigent sick poor of Calcutta and its neighbourhood better, than any number of Dispensaries, "with a few beds to each."

A simple uniform plan, such as that of which I have above sketched the general outline, would in my opinion prove the most efficient for concentrating the earliest information for watching the approach of epidemic fever, and providing means of general relief, in case of its prevalence—into the details of expense I do not consider myself competent to enter, nor do I conceive my incompetence of much consequence in a case of this kind, as from what I have already said, it will be perceived, that I am not so much advocating the saving of rupees, as the preservation of the lives of thousands of our poorest, most helpless, and most destitute, although by no means the least valuable of our fellow creatures.

Before concluding these cursory remarks, I must make a few observations upon the following paragraph of Mr. Mangles' letter.

" Paragraph 6. It appears by the report of the Committee that a Fever Hospital could not be maintained at a less expenditure than 16,000 Rupees, but possibly a fever ward might be attached to the present Hospital at much less expense; and it is clear to His Lordship, that for the same amount, three additional Dispensaries might be established and supported, and by attaching others to the Leper Asylum and General Hospital, seven or eight Dispensaries might be obtained for Calcutta, distributing medical aid, giving facilities for vaccination, and recording nosological information, in every quarter for the town."

The Native Hospital was founded by the voluntary contributions of a number of European and Native gentlemen entirely for the reception of accidents, severe wounds, and surgical cases requiring operation.

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The benevolent gentlemen who, so greatly to their honor, subscribed liberally to found, and subsequently to support the Hospital, framed and passed Rules for its management and government, under the conditions of which, it has prospered to a degree, that must have far exceeded their most sanguine expectations even before the establishment of its two subordinate Dispensaries.

The Native Hospital in its double capacity of a Surgical Hospital as above mentioned, has also afforded medical advice and medicine to out-patients daily ever since its foundation. In the year 1825-1826, prior to the establishment of the Dispensaries, its benefits were bestowed upon 50,608 in and out-patients, and in 1835-1836, ten years after the institution of the Dispensaries, an aggregate number amounting to 236,118 sick individuals, derived professional and medical aid from this institution and its branch Dispensaries alone. I am therefore of opinion that a system which has already been productive of relief to such a vast number of diseased and suffering human creatures, and these benefits spreading wider and wider to an incalculable extent every year, ought on no account to be meddled with. Its constitution, its government, its management, and its rules and regulations, ought to be held sacred. It should be permitted to progress quietly, spreading its benefits far and wide as it has hitherto done. As a Governor of that Hospital, to which I was long attached in another capacity, I should consider it my duty to refuse my assent to any proposal for adding an infirmary to the Hospital, or in any other manner altering its character. My reasons for considering it impolitic to make such an addition to the Hospital I need not mention in this place, as there is not in fact sufficient room for such a building.

There being at present a small monthly surplus after paying all our expenses, the Governors have in contemplation the establishment of a third Dispensary in the suburbs of the Town, but they are not prepared to do so immediately.

Although I am not prepared to state positively, that all or any of the cases of disease which are considered of such a nature as to render it advisable that they should be sent to the Leper Institution, are of an infectious nature, yet the disease is of so loathsome and disgusting an appearance in all its forms—and so many facts have occurred within my own personal knowledge, so strongly tending to prove that several varieties of them are really capable of being communicated by contact, that in my opinion, this Institution should be continued as it now is, entirely separated and secluded from all others to which individuals resort, for medicine and advice. With regard to the last clause of the above paragraph I may observe, and it may indeed be inferred from what I have already stated, that Dispensaries offer no opportunity for the study of the diseases of India. The attendance of the patients is greatly too irregular at the Dispensary, and few of those who apply for relief there have a house in which they can be seen afterwards, and the few who have, would not permit any European to visit them or their families at their own houses. An Hospital on the contrary affords the best possible means of acquiring a knowledge of all the diseases of this country both acute and chronic.

S. N.

No. 75.

D. Stewart, Esq. M. D.

No. 75.

DUNCAN STEWART, Esq. M. D.

Note by D. Stewart, Esq. M. D., on Mr. C. W. Smith's question on the subject of a Fever Hospital, 14th January, 1837.

I have not seen Mr. Mangles' letter; but on the general question of the comparative advantage of Civic Hospitals and Dispensaries, I must say that Dr. Martin's powerful reasoning is to my mind quite conclusive. Dr. Nicolson's illustrations drawn from the history of the Native Hospital, and from an intimate and long acquaintance with the habits, wants and feelings of the Native poor, also appear to me quite decisive of the peculiar applicability of the proposed Fever Hospital to the acknowledged necessities of Calcutta.

I might add my own testimony, if necessary, to the insufficiency of a Dispensary from experience of its short coming in the village of Howrah, where, though the population is industrious, well paid, and crowded, it was found impossible to secure the *regular* attendance of out-patients without the bribe of one or two pice daily, which were *administered* along with the physic, and probably helped fully as much to the cure.

In all Surgical cases, (including in these, cutaneous disease and ulcers) attendance of out-patients at stated periods is more regular, but on the best system and model I know, viz. Mr. Egerton's Hospital, fully three-fourths of the day are devoted by him personally to the duties devolving upon him from attention to only one class of Surgical disease, and we cannot expect to find many, either European or Native gentlemen, equally disinterested or equally qualified. The discussion however I think is greatly to be regretted, as tending to divert attention from the grand object to one of second importance. The objects of both Hospitals and Dispensaries are doubtless allied and similar, but essentially distinct; the latter contributing merely to the temporary alleviation of disease, the former to its *cure* and to a *scientific* acquaintance with its causes and history. Dispensaries will no doubt readily and soon spring up in aid, and association with the Fever Hospital as those of the Native (Surgical) Hospital, have done. It is the natural course of things, and the next ten years will witness it—but not sooner.

D. S.

No. 76.

No. 76.

A. R. Jackson, Esq.

A. R. JACKSON, Esq.

Note by Dr. A. R. Jackson on Mr. C. W. Smith's question on the subject of a Fever Hospital, 14th January, 1837.

I am quite agreed both with Dr. Martin and Dr. Nicolson, that acute disease when once formed cannot be cured except by suitable remedies and domestic comforts afforded to the sick either in their own houses when they have the means of procuring them or in an Hospital when they are too poor to obtain them ~~otherwise~~ (C) It becomes a matter of state and finance to determine whether one life thus saved is worth the chance of six or eight, it might be practicable to preserve from fatal attacks by the relief obtained from a Dispensary on the first feeling of illness allowing that all did apply for the said relief sufficiently early to secure its beneficial efforts. If it is not possible to have both these classes of institutions, an Hospital and Dispensary, attention might be turned to this question, but with reference to the state of Calcutta and its capabilities for the completion and of the present proposal under discussion, I would not for a moment hesitate on the superiority of the plan as laid down by Dr. Nicolson for one Grand Central Hospital for the Medical treatment of all classes of disorders, with subordinate Branch Dispensaries and establishment for forwarding such patients as require house treatment. In respect to the future object of its employment as a School of Medical Instruction there cannot also be a difference of opinion. In any country very little knowledge of disease is obtainable from a Dispensary, and in this less than in any other, from the extreme irregularity with which the applicants return after receiving their remedies and the difficulties the students would have of following the sick through the different stages of their complaints.

A. R. JACKSON.

(cxc)

No. 77.

J. R. Martin, Esq.

No. 77.

J. R. MARTIN, Esq.

*Dr. J. R. Martin's Estimate for Dispensaries of 200 Beds and
20 Beds.*

At a rough calculation—a Dispensary with 200 Beds attached, i. e. 200 Patients to feed and clothe, will cost about 740 Company's Rupees per month, exclusive of Establishment, Europe Medicine and House Rent. This sum includes Country Medicine for about 250 daily applicants or Dispensary Patients.

A Dispensary with 20 Beds attached will cost about 160 Rupees per month. This sum includes Country Medicine for daily applicants or Dispensary Patients, also clothing, dieting, &c. for 20 House Patients.

No. 78.

Capt. F. W. Birch.

No. 78.

CAPT. F. W. BIRCH.

Captain Birch's return to Mr. McFarlan—Number of Carriages, &c.

MY DEAR MCFARLAN,

Four Wheeled Carriages with two Horses,.....	724
Four Wheeled ditto with one Horse,	884
Buggies,	1018
Caranchees,	262
Children's Carriages,	41

The above is the result of the Lists taken in separate Thannas. I would say that there are many more than 262 Caranchees in Calcutta; however the Thannadars swear by their Gods that they have given in correct lists.

Your sincerely,

(Signed) F. W. BIRCH.

APPENDIX.

A

An Abstract of Police Disbursements for one year, framed from the Establishment list for June 1836, and Contingent Bills for 1835-36.

Number of Persons.	Names.	Designation.	Rate of Salary per Month.	Amount. Co.Rs.As.Ps.	Total. Co.Rs.As.Ps.	REMARKS.
	<i>No. 1.—Executive Department.</i>	<i>Establishment, Assessment Department.</i>				
1	Lieut. W. Aber- crombie, ...	Engineer, Su- perintendent of Roads, ...	.....	650 0 0		
1	Sibnoth Chatter- jee, ...	Writer, ...	Sa. 50 0 0	52 4 0		
1	Hurrishchunder Sen, ...	Supervisor in lien of 6 Sir- cars, ...	a 6 0 0	37 9 6	.....	{ In lieu of 6 Sir —salary 42 Rs.
6	.....	Peons, ...	a 4 0 0	25 1 3	.....	{ In attendance on th Supdt. of Roads.
1	Robert Sevestre,...	Executive Of- ficer, ...	300 0 0	313 8 0		
1	.....	1 Sircar, ...	8 0 0	8 5 9	.....	{ Under orders of th Executive Officer.
6	Peons, ...	5 a 5 Sa. Rs. 1 a 5 Co.'s Rs. ...	.....	31 1 11	.....	{ In attendance on Executive Officer.
1	.....	Bricklayer, ...	.....	7 13 4*	.....	{ * In place of Bricklayer and eig Coolies the Execut Officer employs 5 S cars for measuring at receiving Khoa.
8	Mate Coolies, ...	.....	a Sa. 4 0 0	33 7 0*	.....	{ Besides looking ter the cleansing of th Roads and Drains the Division, has cha of Southern Gow khana.
1	James Green, ...	Overseer, Up- per North Division, ...	160 0 0	167 3 3	.....
1	E. Campbell, ...	Do. Lower ditto,	130 0 0	135 13 8		
1	Robert M'Cul- lock, ...	Ditto Lower North ditto,	160 0 0	167 3 3	.....	{ Besides looking ter the cleansing of th Roads and Drains, in charge of Northe Gowkhana.
1	John Tweedale, ...	Do. Upper ditto,	130 0 0	135 13 8		
1	Sooty, Carpenter Mistry, ...	Southern Gowkhana, }	12 0 0	12 8 7		
1	Hessabdee, Assis- tant ditto, ...	Ditto, ...	8 0 0	8 5 9	.....	{ Since reduced Co.'s Rs.
1	Ramjoy, Black- smith, ...	Ditto, ...	12 0 0	12 8 7		
1	Auker, Assistant Carpenter, ...	Ditto, ...	.....	8 0 0		
1	Benoderam, Ham- merman, ...	Ditto, ...	.....	8 0 0		
35		Carried over,...	.....	1814 11 6		

An Abstract of Police Disbursements, &c.—(Continued.)

Number of Persons.	Names.	Designation.	Rate of Salary per month.	Amount.			Total.			REMARKS.
				Co.	Rs.	As. Ps.	Co.	Rs.	As. Ps.	
	Brought forward,...	.....	.....	18	14	11 6				
35	No. 1.—Executive Dept.,—(Contd.)									
1	Bheekaree, Black- smith Mistry,...	Northern Gowkhana, }	.....	12	0	0				
1	Muthoor, Ham- merman, ... }	Ditto, ... }	.....	8	0	0				
1	Nobeen, Carpen- ter Mistry, ... }	Ditto, ... }	.....	12	0	0				
1	Operty, Assistant ditto, ... }	Ditto, ... }	.....	8	0	0				
1	Aunund, Assist- ant ditto, ... }	Ditto, ... }	Sa. 8 0 0	8	5	9				
2	Bellows Man, ... }	Two Gowkhana,	a 4 0 0	8	5	8				
4	Sircars for the 4 Overseers, ... }	.....	6 0 0	25	1	0	.....			Work with the Over- seers, salaries of three have been reduced to 6 Co.'s Rs. each.
2	Durwans, ... }	Two Gowkhana,	5 0 0	10	7	2				
1	Teencouree, Je- madar, ... }	Overseer of Cir- cular Road, }	10 0 0	10	7	2	.....			Very old man, con- sidered as a Pensioner. 5 Upper N. Division. 5 Lower ditto ditto. 3 Upper S. Division. 3 Lower ditto ditto.
	16 Sircars for re- porting nuis- ances, en- croachments, &c., ... }	.....	10 0 0	167	2	8	.....			16 To report nuisan- ces, &c.
	1 Ditto, ... }	.....	.....	10	0	0	.....			1 Unaccounted for.
17										17
	46 Peon employ- ed for report- ing ditto, ... }	.....	Sa. 5 0 0	240	4	10	.....			20 report nuisances, &c 10 Employed by the Supt. of Roads in look- ing after materials. 7 Ditto by the Exe- cutive Officer. 3 In attendance on Mr. Watts.
	3 Ditto ditto, ... }	.....	Co. 5 0 0	15	0	0	.....			2 Do. on Mr. Samuel.
	3 Ditto at the Strand Jetties, }	.....	Sa. 5 0 0	15	10	9	.....			3 Employed under Mr. Statham.
	1 Ditto ditto, ... }	.....	.....	5	0	0	.....			6 Ditto under Mr. Clarke.
53										51
119										2 stated to be Dis- charged.
										53
	Carried over,...	.....	.....	2370	8	6				

An Abstract of Police Disbursements, &c.—(Continued.)

Number of Persons.	Names.	Designation.	Rate of Salary per month.	Amount. Co. Rs. As. Ps.	Total. Co. Rs. As. Ps.	REMARKS.
119	Brought forward,...	.....	.....	2370 8 6		
	No. 1.—Executive Dept.,—(Contd.)					
1	Head Metrany, ...	.....	Sa. 8 0 0	8 5 9		Employed under the four Overseers, six in each Division in keeping the Road and Drains clean.
	16 Khallasies at } 5 Sa. Rs., ... }	.....	83 9 6	.....	.....
	8 Ditto at 5 Co.'s } Rs., ... }	.....	40 0 0	123 9 6		
24	9 Chowkeydars } in the Espla- } nade, ... }	.....	Sa. 4 0 0	37 9 4	.....	Employed in prevent ing nuisances on the Plain.
	3 Ditto ditto, ...	.....	4 Co.'s Rs.	12 0 0	.....
12						
5	.....	Mangies em- ployed in five Boats for re- moving Filth, }	5 Sa.	26 2 0	.....	5 Boats.
10	.....	Dandies ditto, ...	4 0 0	41 12 4		
1	.....	Mangy em- ployed in one Boat for throwing Car- cases, ... }	5 0 0	5 3 7	.....	1 Boat.
2	.....	Dandies ditto,	4 0 0	8 5 8		
					2633 8 8	
174	No. 2.—Account- ant's Department.					
	1 Cossinoth Doss, Writer, ...	...	60 0 0	62 11 2	.....	Accounts—Asse- ment and Judicial. Correspondence, Re- cords, Judicial. Assistant to Cos- noth Doss. Pay Book, Con- vancy Sirkars, &c.
	1 Womachurn } Doss, ... }	Ditto, ...	60 0 0	62 11 2	.....
	1 Suroopchun- der Doss, ... }	Ditto, ...	24 0 0	25 1 3	.....
	1 Punchanun } Banerjee, ... }	Ditto, ...	24 0 0	25 1 3	.....
	1 Aumeer Khan,	Duffory, ...	8 0 0	8 5 9		
	1	Peon, ...	.....	5 0 0		
					188 14 7	
6	No. 3.—Cash De- partment.					
	1 Madunmohun } Chatterjee, ... }	Moherer, ...	12 8 0	13 1 0	.....	Writes Bengale Cash Accounts, Doc- ets Bills.
1		Carried over,...	.....	13 1 0	2822 7 3	

An Abstract of Police Disbursements, &c.—(Continued.)

Persons.	Names.	Designation.	Rate of Salary per month.	Amount. Co. Rs. As. Ps.	Total. Co. Rs. As. Ps.	REMARKS.
1	Brought forward,...	.....	.....	13 1 0	2822 7 3	
	No. 3. — Cash Department—(Contd.)					
	1 Goluckchunder Mookerjee, }	Moherer, ...	Sa. 12 8 0	13 1 0	.....	{ Was not produced before the Committee. Pays the Thana Establishment. Vide No. 17.
	1 Hurromohun Dutt, ... }	Ditto, ...	10 0 0	10 7 2	.....
	1 Rychurn Seal,	Poddar, ...	7 0 0	7 5 0	.....
					43 14 2	
3	No. 4.—Under the Supdt. of the Police. Thanadaree.					
	2 Thanadars at }	.....	Co. 83 9 6			
	40 Sa. }					
	4 Ditto at 30, ...	.....	125 6 4	.....	.....	1st Division, ... 12
	6 Ditto at 25, ...	.....	156 12 0	.....	.....	2d Ditto, ... 12
	6 Do. at 25 Co.'s Rs.	.....	150 0 0	.....	.....	3d Ditto, ... 6
	8 Do. at 16 Sa. Rs.	.....	133 11 4	.....	.....	4th Ditto, ... 7
	11 Do. at 16 Co.'s Rs.	.....	176 0 0			
37				825 7 2		37
	14 Naibs at 10 } Sa. Rs. ... }	.....	146 4 4			
37	23 Do. at 10 Co.'s Rs.	.....	230 0 0	376 4 4		
	33 Patrol ditto at }	.....	241 5 0			
	7 Sa. Rs., ... }					
	39 Ditto ditto at }	.....	273 0 0			
	7 Co.'s Rs., ... }					
	2 Ditto ditto at }	.....	14 0 0			
	7 Co.'s Rs., ... }					
74				528 5 0		
	Oil, ...	.....	38 10 7			
	Dedt. Unauthorised.					
	Establishment, ...	.....	9 6 3	29 4 4		
	69 Chokeydars at 5 Sa. Rs., }	.....	308 3 5			
	345 Ditto at 4, ...	.....	1441 1 6			
	274 Ditto at 4-8, ...	.....	1287 3 8	.....	.....	By Capt. Birch's Statement—
	78 Do. at 5 Co.'s Rs.	.....	390 0 0	.....	.....	Thulpuhroos, ... 74
	295 Do. at 4 Co.'s Rs.	.....	1180 0 0	.....	.....	Day Chokeydars, 444
	158 Ditto at 4-8, ...	.....	711 0 0			Night Ditto, ... 723
	3 Ditto at 5, ...	.....	15 0 0			
	16 Ditto at 4, ...	.....	64 0 0			
	12 Ditto at 4-8, ...	.....	54 0 0			
250				5450 8 7	7209 13 5	
258						
	Carried over,...	.....	.....	.....	10076 2 10	

An Abstract of Police Disbursements, &c.—(Continued.)

Number of Persons.	Names.	Designation.	Rate of Salary per month.	Amount.			Total.			REMARKS.
				Co.	Rs.	As. Ps.	Co.	Rs.	As. Ps.	
	Brought forward,...	...	...	...	...	...	100	76	2 10	
	<i>No. 5.—Siddirallee.</i>									
7	2 Jemadars at } 20 Sa. Rs. .. }	...	41 12 8							
	5 Ditto at 16 Sa. Rs.	...	83 9 6	125	6	2				
	9 Naibs at 6 Sa. ..	...	56 6 3							
	13 Ditto at 6 Co.'s. .	...	78 0 0	134	6	3				
22										
	Oil, ...	...	...	22	15	9				
245	138 Burkundozes } at 5 Sa. Rs. }	...	720 14 6							
	107 Ditto at 5 Co. Rs.	..	535 0 0	1255	14	6	1538	10	8	By Captain Birch's Statement:— Burkundozes, 218 At Boita- khana Thana, 16 <u>234</u>
274										
	<i>No. 6.—Girdwarce.</i>									
1	Jemadar .....	...	...	10	0	0				
5	3 Naibs at 7 Sa. Rs.	...	21 15 0							
	2 Ditto at 7 Co.'s. .	...	14 0 0	35	15	0				243
	Oil, ....	...	...	1	0	8				
54	30 Girdwars at } 4-8 Sa. Rs. }	...	140 15 0							
	24 Ditto at 4-8 Co.	...	108 0 0	248	15	0	295	14	8	
60										
	<i>No. 7.—Opeergustee..</i>									
4	3 Naibs at 7 Sa.	...	21 15 0							
	1 Ditto at 7 Co.	...	7 0 0	28	15	0				
19	10 Pykes at 5 Sa.	...	52 3 10							
	9 Ditto at 5 Co.	...	45 0 0	97	3	10	126	2	10	
23										
	Carried over,	...	...	...	...	...	12036	15	0	

An Abstract of Police Disbursements, &c.—(Continued.)

Number of Persons.	Names.	Designation.	Rate of Salary per month	Amount. Co. Rs. As. Ps.	Total. Co. Rs. As. Ps.	REMARKS.
	Brought forward ...	...	...	...	12,036 15 0	
	<i>No. 8.—River Chow- kie.</i>					
4	Sircars at 8 Sa. Rs.	...	...	33 7 0		
	8 Boats (hire) } at 6 Sa. Rs. }	...	50 2 0			
	1 Ditto .....	...	6 0 0	56 2 0		
9	Oil,	...	...	4 11 2		
	4 Manjees at } 4-8 Sa. Rs. }	...	18 12 8			
9	5 Ditto at 4-8, Co.	...	22 8 0	41 4 8		
	13 Dandies at 3-8 Sa	...	47 8 6			
	57 Ditto.	...	199 8 0			
	2 Do. at 3-8 Co. Rs.	...	7 0 0	254 0 6		
72 18	Pcons .. ..	...	at 4 Co.'s Rs.	72 0 0	461 9 4	
103	<i>No. 9—Chowkedars at Govt. House and the Justices' Houses.</i>					
	4 ... ..	...	at 4 Sa. Rs.	16 11 4		
8	4 ... ..	...	at 4 Co.'s Rs.	16 0 0	32 11 4	

Establishment per month taken from the Estab-
lishment list for June 1836, Co. Rs. ... 12531 3 8
Or per year, Co's Rs. 1,50,374 12 0 equal at the
Exchange of Co's Rs. 104-8 per 100 Sa. Rs.=1,43,899 4 6

An Abstract of Police Disbursements, &c.—(Continued.)

Quantity.	Materials or Labour.	Amount,				Total,				Grand Total,				REMARKS.
		Sa.	Rs.	As.	Ps.	Sa.	Rs.	As.	Ps.	Sa.	Rs.	As.	Ps.	
	Brought forward, Sa. Rs. ..	...	...	...		..	..	..		1,43,899	4	6		
	<i>No. 10.—Repairing Roads, from 1st May, 1835, to 30th April, 1836.</i>													
	<i>Materials.</i>													
190858	Ferrahs of Khoa for the Town and Circular Roads, ... }	19187	15	4										
41701	Do. for the Strand Roads, ... }	4600	9	1										
	Supplied by Clarke, ... }													
232559		23788	8	5										
	Expenses of breaking Stones, ...	1983	5	2										
	Landing Stone, ...	2148	0	0										
	Hammers, Rattan Baskets, &c...	460	4	1										
	Hackery hire, ...	10	7	11										
	Landing Stone for the support of Strand bank, ... }	201	0	0										
	Paving a Lane, &c. ...	67	2	1		23658	11	8						
	<i>Rollers.</i>													
4	Khallasies superintending the Rolling of Roads, at 5 Rs. per month ... }	240	0	0										
1	Peon under Clarke superintending the Strand Roads, at 5 Rs. per month ... }	25	0	0										
	Tar, Grease, &c. ...	39	8	8										
	Repairing Roller yokes, ...	46	7	6										
	Feeding Horses employed in the Rollers, including Syces' wages, ... }	2471	5	4										
1	Stone Roller purchased, ...	57	8	0										
6	Horses purchased, ...	126	0	0		3005	13	6						
	Hackery hire for 190868 Ferrahs of Khoa, ... }	6133	1	4										
14062	Coolies measuring Ditto, and depositing on Roads, ... }	1479	15	1										
24741	Do. digging and levelling Roads, ...	2679	12	0										
2162	Bricklayers spreading Khoa, ...	361	2	8										
3359	Bhistees watering Do. ...	447	7	11										
1049	Coolies digging and levelling Strand Division, ... }	128	7	0		11229	14	0						
	Hackery hire with Stones, ...	360	14	10										
943	Coolies measuring and depositing Cutting and levelling Roads, paid Clarke, ... }	102	1	11										
	... }	205	2	3										
140	Bricklayers spreading, ...	23	5	4		691	8	4						
	Strand Bank, contract for keeping it in order 11 months, at 100 Rs. per month ... }	1100	0	0										
	Coolies placing stones for defence ... }	77	8	0		1177	8	0						
	Carried over, ...	...	...	...		44763	7	6						

An Abstract of Police Disbursements, &c.—(Continued.)

Quantity.	Materials or Labour.	Amount.				Total.				Grand Total,				REMARKS.
		Sa.	Rs.	As.	Ps.	Sa.	Rs.	As.	Ps.	Sa.	Rs.	As.	Ps.	
	Brought Over, Repairs of Roads.	....	....			447	63	7	6	1,43,899	4	6		
	<i>Strand Division.</i>													
3379	Bullocks and Carts at 14-8 } per month,	1632	14	0										
1255½	Do. for Rollers,	606	13	2										
614	Hackeries at 9-4 per month, ...	189	4	11										
14631	Coolies, at 3-8 ..	1706	15	2										
	1 Sirdar, 5 ..	60	0	0										
	3 Peons, ..	180	0	0										
	2 Domes, at 4 ..	96	0	0										
	1 Bhistee for 6 months at 4 ..	21	0	0										
7	—													
	Gunny bags, ...	5	0	0										
	Wear and Tear, ...	36	0	0		4536	15	3						
	<i>Sundries.</i>													
	Hackery hire, removing re- } jected Khoa,	8	10	6										
	Ditto, Stones, ..	6	4	0										
1	Peon under Clarke, 14th to } 30th September, 1835, ... }	2	13	0		17	11	6						
	<i>Cutch Roads.</i>													
	Hackery hire with Rubbish } to Cutch Roads and sides } of Pucka Roads, .. .. }	....	....			297	2	7		49,615	4	10		
	<i>No. 11.—Cleansing.</i>													
	<i>1st Division.</i>													
15167	Coolies for Loading Carts, at } 3-8 Sa. Rs. per month, ... }	1769	6	3										
10788	Hackeries, at 9-4 ..	3328	6	3										
45778	Drain Coolies, at 3-8 ..	5340	11	3										
8260	Drain Boys, at 2-8 ..	688	4	3										
366	Coolie Sirdars, at 5 ..	60	0	0										
363	Dome Sirdars, at 5 ..	59	7	9										
311	Mehter Sirdars, at 5 ..	510	12	6										
4221	Mehters, at 4 ..	562	12	0										
1268	Domes, at 4 ..	169	0	0										
1229	Pair Bullocks for Rollers, at 14-8	593	15	3										
7825	Ditto, for Box Carts at 11 ..	3782	0	0										
250	Coolies with Rollers, at 3-8 ..	29	1	6										
25	Pair Bullocks for Dome Carts } at 14-8 }	12	0	9										
	Wear and Tear of Implements } furnished by Contractor, at } 15 }	180	0	0		16625	13	9						
	<i>2d Division.</i>													
15040	Loading Coolies, at 3-8 ..	1754	8	9										
7290	Hackeries, at 9-4 ..	2246	10	6										
45740	Drain Coolies, at 3-8 ..	5336	4	0										
	Carried Over, ...	9337	7	3		16625	13	9		1,93,514	9	4		

Overseer Clarke makes use of Box Carts, Hackeries, Coolies, &c. supplied by the Contractor, in cleansing as well as in repairing the roads of his Division—this charge is borne under the head of repairs, the greater part of it being on that account.

An Abstract of Police Disbursements, &c.—(Continued.)

Quantity.	Materials or Labour.	Amount.	Total.	Grand Total.	REMARKS.
		Sa. Rs. As. Ps.	Sa. Rs. As. Ps.	Sa. Rs. As. Ps.	
	Brought Over, . . . . .	.....	16625 13 9	1,93,514 9 4	
	No. 11.— <i>Cleansing (Contd.)</i> ..	9337 7 3			
6011	Drain Boys, at 2-8	500 14 0			
366	Coolie Sirdars, at 5	60 0 0			
340	Mehter Sirdars, at 5	55 9 9			
1382	Domes, at 4	180 13 10			
5187	Mehters, at 4	691 8 3			
6037	Pairs of Bullocks for Box Carts, } at 14-8	2917 12 6			
31	Pair Ditto, Dome Carts,	14 15 3			
	Wear and Tear, as above,	180 0 0	13939 10 0		
	<i>3rd Division.</i>				
15305	Loading Coolies, at 3-8	1785 8 3			
10852	Hackeries, at 9-4	3345 15 0			
47821	Drain Coolies, at 3-8	5579 0 6			
8028	Ditto Boys, at 2-8	668 15 3			
366	Coolie Sirdars, at 5	60 0 0			
321	Dome Sirdars,	52 7 0			
363	Mehter Sirdars,	59 7 9			
1390	Domes, at 4	185 4 3			
4339	Mehters, at 4	578 7 3			
8236	Pairs of Bullocks for Box Carts, } at 14-8	3980 10 6			
6256	Ditto for Rollers,	3024 9 9			
1085	Bhistees, at 4	144 10 3			
1085	Wear and Tear, as above,	180 0 0	19644 15 9		
	<i>4th Division.</i>				
15255	Loading Coolies, at 3-8	1775 15 6			
13899	Hackeries, at 9-4	4285 7 6			
39648	Drain Coolies, at 3-8	4625 8 0			
8449	Ditto Boys, at 2-8	704 0 6			
366	Coolie Sirdars, at 5	60 0 0			
346	Dome Sirdars, at 5	56 9 9			
362	Mehter Ditto, at 5	59 5 0			
1373	Domes, at 4	182 15 6			
4297	Mehters, at 4	572 13 9			
4214	Bhistees, at 4	561 13 0			
5905	Pairs of Bullocks for Box Carts, } at 14-8	2863 14 0			
	Wear and Tear, as above,	180 0 0	15928 6 6		
	<i>Strand Division.</i>				
1	Boat for removing Rubbish from } the Strand Division for 7 } months, at 25 Rs. per month }	.....	175 0 0		
	<i>Feeding.</i>				
Mds. secr.					
181 24	Gram for Bullocks in the South- } ern Gowkhana from April, } 1835, to March, 1836. }	269 11 0			
593 20	Straw for Ditto,	223 2 4			
45 21½	Oil Cakes for Ditto,	23 0 3			
12	Mustard Oil,	2 2 9			
	Carried Over,	518 0 4	66,313 4 10		

An Abstract of Police Disbursements, &c.—(Continued.)

Quantity.	Materials or Labour.	Amount.				Total.				Grand Total.				REMARKS.
		Sa.	Rs.	As.	Ps.	Sa.	Rs.	As.	Ps.	Sa.	Rs.	As.	Ps.	
	Brought Over, . . . . .	....				....				1,93,514	9	4		
	<i>Cleansing,—(Continued.)</i>	....				663	13	4	10					
	<i>Feeding,—(Continued.)</i>	518	0	4										
Mds. accr. 206 28	Gram for Bullocks,	409	8	3										
116 8	Straw, in the Northern Gow- khana for Ditto,	463	0	0										
	Feeding Horses in the Northern Gowkhana, at 15 Rs. each including Syces' Wages,	1746	2	9		3,136	11	4						
	Wages of a Moochee for 7 months, 9 days, at 6 Rs.	43	12	6										
	Extra Carpenter, Blacksmiths &c. employed for repairing Carts,	85	14	6										
	Harness for Horses, &c.	105	9	6										
1	Horse purchased,	40	0	0										
5	Bullocks Ditto,	56	0	0		331	4	6						
	<i>Gowkhana Establishment.</i>													
	<i>Northern.</i>													
2	Sirdars, 12 months, at 5 Rs.	120	0	0										
1	Ditto, 1 month and 25 days,	9	2	9										
11	Drivers for 12 months, at 3 Rs.	396	0	0										
1	Ditto, for 2 months and 3 days,	6	4	9										
1	Bangywallah Bhistee at 6 Rs.	72	0	0										
	Shoeing Bullocks,	20	8	6										
		624	0	0										
	<i>Southern.</i>													
1	Sirdar, 12 months, at 5 Rs.	60	0	0										
3	Drivers, 10 months, at 3 Rs.	90	0	0										
9	Ditto, 2 months, at 3 Rs.	54	0	0										
8	Ditto, 23 days,	17	9	6										
1	Ditto, 5 days,	0	8	0										
1	Ditto, 9 days,	0	14	6										
1	Bhistee, 12 months, at 4 Rs.	48	0	0										
	Shoeing,	9	0	0										
		280	0	0		904	0	0						
	Bullocks purchased, at 5 Rs.	79	8	0										
	A lot of Tools, purchased for the Gowkhana,	87	7	9		166	15	9						
	<i>New Carts.</i>													
10	Large Carts, at 95 Rs.	950	0	0										
14	Ditto, at 85 Rs.	1190	0	0										
1	Small Ditto,	57	13	0		2197	13	0						
25														
	Carried Over, . . . . .	....				73050	1	5						

An Abstract of Police Disbursements, &c.—(Continued.)

Quantity.	Materials or Labour.	Amount.				Total.				Grand Total.				REMARKS.
		Sa.	Rs.	As.	Ps.	Sa.	Rs.	As.	Ps.	Sa.	Rs.	As.	Ps.	
	Brought Over, . . . . .	....	....	....	....	73050	1	5		1,93,514	9	4	
	Repairing Carts, for the year, } including Iron, Planks, } Nails, Screws, &c. }					841	10	9						
						73891	12	2						
	No. 12. Repairing Bridges, by R. Se- } vestre, }	2759	1	9										
	Repairing Drains, by R. Sevestre	5558	8	7		8317	10	4						
	No. 13.—Rent.													
	Of Thanas,	2234	11	3										
	Constables' Houses,	2280	0	0										
	Guard House,	420	0	0										
	Khoa Depôt,	86	6	5										
	Gowkhana,	163	6	9		5184	8	5						
	Erecting Thanas,	122	9	3										
	Repairing Thanas,	719	8	10		842	2	1						
	No. 14.													
	Office Charges, Stationery, &c....	....	....	....		287	7	11					
	No. 15.													
	Miscellaneous.													
	Sergeant's Staff Pay,	260	0	0										
	Medicine for Guard,	90	0	0										
	Collector's Office, a Directory, ..	8	0	0										
	Books and Stationery for Assess- } ments, }	62	0	0										
	Boat and Cooly hire on Ballast, ..	69	0	0										
	Advertisement,	546	7	0										
	Sign Boards,	216	11	6										
	Badges,	378	12	9										
	Nogarah,	5	0	0										
	Extra Work,	21	7	0										
	Filth Boat,	15	0	0										
	Paving a Ghaut,	145	14	0										
	Repairing House,	10	0	0		1828	4	3						
	Total, chargeable to the Assessment Fund,									2,83,866	6	6		

An Abstract of Police Disbursements, &c.—(Continued.)

Number of Persons.	Names.	Designations.	Rates of Salary per month.	Amount.			Total.			REMARKS.	
				Co.	Rs.	As. Ps.	Co.	Rs.	As. Ps.		
<i>Establishment, Judicial—Conservancy Department.</i>											
No. 16.											
1	<i>General Department.</i>										
	H. C. Watts,	Accountant,	Sa. 400		418	0	0				
1	R. Habberly,	Judicial clerk c. m.	280		292	9	8				
1	Shaik Harow,	Interpreter Chinese language,	50		52	4	0				
1	Pittamber Chatterjee,	Bengal Moherer.	15		15	10	9		Keeper of stolen goods, 3rd Division.		
1	Noorally,	Persian Moonshee.	15		15	10	9				
11	Establishment for sinking dead bo- dies in the River	50		52	4	0		This includes hire of 2 Boats. Besides this Es- tablishment there is a small monthly charge for ropes, &c.		
2		Furashes,	each	5		10	7	0			
2		Durwan,	Sa. 4 Co. 4		8	2	9				
2		Mehters,									
1		Betwallah,	Sa. 5		5	3	6				
1		Crier,	4		4	2	9				
1		Bhistee,	Co. 4		4	0	0				
5		Peons,	3 at Sa. 5 2 at Co. 5		25	11	9				
30											
No. 17.											
<i>Cash Department.</i>											
1	Rainjoy Mookerjee...	Cashier,	60		62	11	2		Also assistant to Cashier. Examines money receiv- ed, vide No. 2.		
1	Gooroodoss Mookerjee	Moherer,	25		26	2	0				
1	Rychurn Seal,	Poddar,	10		10	7	2	1011 10 0			
3											
No. 18.											
<i>Police Hospital.</i>											
1	R. H. Bain, M. D. ..	Surgeon.	Co. 300		300	0	0		(General Superint. sees the Medicine properly made up and adminis- tered, also the Diet.		
1	M. R. Crawford,	Apothecary,			80	0	0				
2	Gunganarain,	Native Doctors,	at Sa. 12		25	1	2				
2	Nuncoo & Petumber,	Dressers,	at Co. 8		16	0	0				
1	Callychurn Chatterjee	Sircar,	6		6	0	0				
1	Tarrachaund,	Hindoo Cook,			5	0	0				
1	Bussureedun,	Mussulman ditto,			4	0	0				
1	Golaal Sing,	Durwan,			4	0	9				
2	Baroo Panchoo Aunno	Bhistees,	4		8	0	0				
4	Mudoo, Sonatun, } Ukber, Chamroo, }	Male Attendants,	4		16	0	0				
1		Female ditto,			4	0	0				
4		Moordarfrashes,	4		16	0	0				
5		Mehters,			20	0	0				
1		Mally,			4	0	0	508 1 2			
27											
No. 19.											
<i>House of Correction.</i>											
1	E. B. Gleeson,	Keeper,	Sa. 100		104	8	0		Besides the Salary, gets a commission of 35 per cent. on the profit of Convict labour.		
1		Native Doctor,	12		12	8	7				
1		Dresser.	8		8	5	9				
1		Jemadar of Peons,			8	5	9				
1		Do. of Burkendoss,	10		10	7	2				
1		Naib of ditto,	7		7	5	0				
8		Peons,	6 at Sa. 4 2 at Co. 4		33	1	3				
1		Blacksmith,	2		2	1	5				
1		Durwan,			4	0	0				
1		Mehter,	4		4	2	10				
18		Burkendosses,	5		94	0	6				
2	1 Durwan, 1 Meh- ter, and Oil for lamp, transferred from the Sheriff.	....			10	4	9			
37						299	0 0			

Carried over, 1818 11 2

An Abstract of Police Disbursements, &c.—(Continued.)

Number of Persons.	Names.	Designation.	Rate of Salary per Month.	Amount.			Total.			REMARKS.
				Co.	Rs.	As. Ps.	Co.	Rs.	As. Ps.	
	Brought forward,....	1,818	11	2	
	<i>No. 20.</i>									
	<i>Conservancy Depart-</i>									
	<i>ment.</i>									
1	Joseph Samuel, . . .	Clerk & Interpreter,	Sa. 250	261	4	2				Overseer Strand Roads. Muster Master and Over- seer, Esplanade.
1	Samuel Clark, . . .	Constable,	100	104	8	0				
1	G. H. Statham, . . .	Ditto,	100	104	8	0				
1	Madub Chund Seal, .	Writer,	60	62	11	2				
1	Gooroopersaud Bose, .	Ditto,	20	20	14	5				
1	Nilmoney Sen, . . .	Ditto,	20	20	14	5				
1	W. H. Grant, . . .	Ditto,	20	20	14	5				
1	Essenchunder Singhee	Ditto,	12	12	8	7				
1		Brahmin,		7	0	0				
1		Mollah,	7	7	5	0				
1	John Seret,	Overseer, Water- } ing & Lighting, }	60	62	11	2				
1	Meetoo,	Jemadar in charge } of Steam En- } gine, }	10	10	7	2				
1	Bissonauth Doss, . .	Sirkar Canjeehouse,	6	6	4	3				
1		Durwan,		3	0	0				
1	Cullen Sing,	Naib Tank Guard	7	7	5	0				
1	Head Molly,	Mohamedan Bu- } rying Ground, }	5	5	3	7				
1	Mate ditto,		4	4	2	10				
3	Mollys,		3	9	6	5				
1	Poon,	Esplanade Walk, . .	5	5	3	7				
10	Coolies,	Ditto,	3	31	5	7				
51	Establishment of Publick Tanks sanctioned by or- der of Govern- ment 28th April, 1834, . . . . . }	.....	....	238	5	0			
4	Mehters & Bhistees at Scapoys Tatties Meerjauny Gully, }	16	11	5	1,022	10	2	
86										
	<i>No. 21.</i>									
	<i>Under the Supdt. of</i>									
	<i>the Police.</i>									
1	J. J. M' Cann, . . .	Dy. Superintendent	Sa. 272	284	3	6				Gooroochurn was acting for Shyamlohl, who has since resumed his office.
1	Bernard Furie, . . .	Clerk,	100	104	8	0				
1	Philip Delmar, . . .	French Interpreter.	50	52	4	0				
1	D. Ryan,	Inspector of Gun- } powder Godowns }	30	31	5	7				
1	C. F. Leal,	Register of Ticca } Bearers, }	32	33	7	0				
1	Hurryputty,	Assistant Ditto, . .	10	10	7	2				
1	A. Julien,	Writer,	52	54	5	5				
1	J. W. Peterson, . . .	Ditto,		69	11	4				
1	J. H. Councell, . . .	Ditto,	30	31	5	7				
1	Mr. J. Wade, . . .	Ditto,	35	37	10	0				
1	Hurrydoss Sen, . . .	Ditto,	32	33	7	0				
1	Bycantonoth Ban- } nerjee, }	Ditto,	30	31	5	7				
1	Radabullub Dutt, . .	Ditto,	20	20	14	4				
1	Gooroochurn Sirkar .	Persian Moonshee,		35	0	0				
14				829	14	6				
	Carried over,	2,841	5	4	

An Abstract of Police Disbursements, &c.—(Continued.)

Number of Persons.	Names.	Designation.	Rate of Salary per Month.	Amount.			Total.			REMARKS.
				Co.	Rs.	As. Ps.	Co.	Rs.	As. Ps.	
	Brought Over, .....			..			2,841	5	4	
14	No. 21. <i>Under the Supdt. of the Police (Contd.)</i>						829	14	6	
1	Husmutally,	Deputy Persian } Moonshee, ... }	Sa. 25		26	2 0				
1	Nussurdeen Mahd...	Nazer,	50		52	4 0				
1	Modungopal Mo- zendar,	Bengal Moonshee,	30		31	5 7				
1	Ramtonoo Chatterjee,	Bengal Mohurier,	10		10	7 2				
1	Buxoo, ..	Jemadar of Peons,	16		16	11 6				
1	Anwarkhan,	Duftory,	8		8	5 9				
32	Summons' Peons, ..	.. } .. }	28 at Sa. 5 4 at Co. 5		166	4 4	1141	6	10	
52	No. 22. <i>Town Guard.</i>									
5	Staff allowance to 5 Sergeants. ..	..	..		103	9 4				
1	Jemadar, ..	Of Burkendoses, ..	25		26	2 0				
7	} 9 Naibs, ..	Naibs of Ditto, ..	4 at 7 Cos. Rs. 3 at 7 Sa. Rs.		49	15 0				
1		Jemadar of Phatuk	10		10	7 2				
1		Naib of Ditto, ..	6		6	4 3				
1		Bhistee,	4		4	2 10				
1		Mehter,	4		4	2 10				
1		Swceper,	4		4	2 10				
8		Burkendoses,			32	8 7				
75		Ditto,			413	4 7	654	11	5	Peons attend the Police Office with Prisoners.
101	No. 23. <i>Female Kallara.</i>									
1		Jemadarnee,	Sa. 8		8	5 9				
4		Peons,	5		20	14 4				
1		Bhistee,			4	0 0	33	4	1	Authorized Establish- ment. Actual charge is something more.
6	No. 24. <i>Constables.</i>									
1	R. Bagnall,	Head Constable, ..	Sa. 90		94	0 9				
8	Hamilton, Jones, Perry, Tate, ..	Constables,	at 60		501	9 4				
	Macaskell, Gwat- kin, Closton and Goodsall, ..									
2	J. and G. Steven, ..	Ditto,	at Co. 60		120	0 0	715	10	1	
11	No. 25. <i>Fire Engines.</i>									
1	Thomas Allan,	Ditto,	Sa. 60		62	11 2				
1	Edward Jones,	Ditto,			60	0 0				
1		Syrang,	Sa. 9		9	6 4				
1		Jemadar Bhistee,	8		8	5 9				
1		Carpenter,	8		8	5 9				
1		Blacksmith,	8		8	5 9				
2		Moochees,	at 6		12	8 4				
8		Tindals,	at 6		48	0 0				
40		Khallashies, ..	8 at 5 Sa. Rs. 32 at 5 Co. Rs.		201	12 8				
80		Bhistees, ..	7 at 1 Sa. Rs. 73 at 4 Co. Rs.		321	4 0	740	11	9	
136	Carried over, .....	.....					6,127	1	6 27	202 12 0

In rains reduced on the
following scales.
 1 Constable 60 62 11 2
 1 Syrang, 9 9 6 4
 1 Jamadar 8 8 5 9
 1 Carpenter 8 8 5 9
 1 Blacksth. 8 8 5 9
 2 Moochees 12 12 8 4
 10 Khallash. 50 51 12 9
 10 Bhistees 40 41 4 2

An Abstract of Police Disbursements, &c.—(Continued.)

Number of Persons.	Names.	Designation.	Rate of Salary per Month.	Amount.			Total.			REMARKS.
				Co.	Rs.	As. Ps.	Co.	Rs.	As. Ps.	
	Brought forward, . . .	....	....	....	....	....	6,127	1	6	
	<i>No. 26.</i> <i>Magistrates' Office.</i> <i>1st or Upper North</i> <i>Division.</i>									
1	C. F. Leal,	Interpreter,	Sa. 150	156	12	0				
1	Bissembhur Law, ..	Writer,	100	104	8	0				
1	Modoo Sooden Ba- nerjee,	Ditto,	40	41	12	9				
1	Goluckchunder Ba- nerjee,	Ditto,	30	31	5	7				
1	A. Malcolm,	Ditto,	30	31	5	7				
1	Joyhed,	Duftory,	8	8	5	9				
1	Ramneedy Panda, ..	Brahmin,	7	7	5	0				
1	Golamsurwar,	Mollah,	7	7	5	0				
2	.. .. .	Peons,	{ 1 at 5 Sa. Rs. 1 at 5 Co. Rs. }	10	3	6	398	15	2	4 Peons are employed in this Division.
10										
	<i>No. 27.</i> <i>2d or Lower North</i> <i>Division.</i>									
1	J. P. Namey,	Clerk,	Sa. 130	135	13	8				
1	Hullothur Law, . . .	Writer,	100	104	8	0				
1	Gooroopersaud Ba- nerjee,	Ditto,	50	52	4	0				
1	Goopeemohun Chat- terjee,	Ditto,	30	31	5	7				
1	Bhogovan,	Brahmin,	7	7	5	0				
1	.. .. .	Mollah,	7	7	5	0				
4	.. .. .	Peons,	{ 1 at 5 Sa. Rs. 3 at 5 Co. Rs. }	20	3	7	358	12	10	
10										
	<i>No. 28.</i> <i>3d. or Upper South</i> <i>Division.</i>									
1	J. Rodrigues,	Clerk,	Sa. 100	104	8	0				
1	Ramdhone Mitter, ..	Writer,	70	73	2	5				
1	Radanoth Chatterjee, ..	Ditto,	50	52	4	0				
1	Samachurn, Ditto	Ditto,	30	31	5	7				
1	Ramnaran, Ditto, ..	Ditto,	50	52	4	0				
1	Chunder Mohun, Do.	Ditto,	20	20	14	4				
1	Hybut Khan, ..	Duftory,	8	8	5	9				
1	Abrishallah, ..	Mollah,	7	7	5	0				
1	Sheedanoth Panda, ..	Brahmin,	7	7	5	0				
9	.. .. .	Peons,	5	47	0	3	404	6	4	
18										
	Carried over, . . . .	....	....	....	....	....	7,289	3	10	

An Abstract of Police Disbursements, &c.—(Continued.)

Number of Persons.	Names.	Designation.	Rate of Salary per Month.	Amount.			Total.			RE MARKS.
				Co.	Rs.	As. Ps.	Co.	Rs.	As. Ps.	
	Brought Over, .. ....	.....	.....	.....	.....	.....	7,289	3	10	
	<i>No. 29. 4th or Lower South Division.</i>									
1	G. Aviet, ..	Interpreter,	Sa. 250	261	4	0				
1	G. Rodgers, ..	Writer, .....	.....	70	0	0				
1	Dyalchaud Bose, ..	Ditto,	Sa. 50	52	4	0				
1	T. Swindon, ..	Ditto, .....	.. ..	40	0	0				
1	Premchaund Mullick, ..	Ditto,	Sa. 20	20	14	4				
1	.. ..	Duftory, .....	.....	8	0	0				
1	.. ..	Brahmin, .....	.....	7	0	0				
1	Obed, ..	Mollah,	Sa. 7	7	5	0				
4	.. ..	Peons, ..	{ 2 at 5 Sa. Rs. 2 at 5 Co. Rs. }	20	7	2	487	2	6	
12										
	<i>No. 30. Magistrates.</i>									
1	D. McFarlan, Esq.	Chief Magistrate, ..		3,000	0	0				
1	W. C. Blaquiere, Esq.	3d Division,	Sa. 1,400	1,463	0	0				
1	A. S. L. McMahon, Esq.	4th Ditto, ..	1,200	1,254	0	0				
1	C. K. Robison, Esq.	1st Ditto, ..	1,000	1,045	0	0				
1	P. O'Hanlon, Esq. ..	2d Ditto, ....	..	1,000	0	0				
1	F. W. Birch, Esq. ..	Supdt. of Police, ..	..	500	0	0	8,262	0	0	
6										
				per month, ..			16,038	6	4	
Or per year, Co's. Rs. 1,92,463, equal at the Exchange of 104.8										
to Sa. Rs. 1,84,175 1 11										

The above paid by Government from General Revenue.

An Abstract of Police Disbursements, &c.—(Continued.)

Description.	For what period.	Sa. Rs. As. Ps.			Sa. Rs. As. Ps.			Grand Total.			REMARKS.
		Sa.	Rs.	As. Ps.	Sa.	Rs.	As. Ps.	Sa.	Rs.	As. Ps.	
Brought over	.....	.....	.....	.....	.....	.....	.....	1,84,175	1	11	
Judicial Contingent Charges,	From 1st May, 1835, to 30th April, 1836.										
No. 31. Diet.											
To Prisoners,	.....	.....	49	12	2						
Patients,	.....	.....	23	78	13	11					
Sergts. upon Service,	.....	.....	60	0	0						
Witnesses,	.....	.....	72	8	0						
Sundries,	.....	.....	71	4	0	7495	0	0			
No. 32. Conveyance Allowance to Constables, &c.	.....	.....	.....	.....	.....	947	14	9			
No. 33. Law Charges.	.....	.....	.....	.....	.....	7392	0	0			
No. 34. Clothing.											
Prisoners,	.....	.....	81	13	12	9					
Patients,	.....	.....	381	10	3	1195	7	0			
No. 35. Medicine.	.....	.....	.....	.....	.....	505	2	8			
No. 36. Repairs.											
Town Guard,	.....	.....	60	0	0						
House of Correction,	.....	.....	184	10	4						
Sergeants' Quarters,	.....	.....	43	3	6						
Police Office,	.....	.....	12	9	5						
Sepoy Barrack,	.....	.....	10	5	10						
Pyke Guard,	.....	.....	107	14	6	418	11	7			
No. 37. Reward.											
For Apprehensions, ..	.....	.....	.....	.....	.....	755	0	0			
Informations, &c.	.....	.....	.....	.....	.....	
No. 38. Office Charges.	.....	.....	.....	.....	.....	1156	3	5			
No. 39. Advertisements.	.....	.....	.....	.....	.....	71	2	0			
						19,936	15	6			
Carried over,	.....	.....	.....	.....	.....			1,84,175	1	11	

Country Medicine
Police Hospital, March to
Nov. 1835, .. 168 0 0
Town Guard and Female
Kattara, Do. 145 2 8
House of Correction
March, 1835, to
July, 1836, .. 192 0 0
505 2 8

An Abstract of Police Disbursements, &c.—(Continued.)

Description.	For what period.	Sa Rs. As. Ps.				Sa. Rs. As. Ps.				Grand Total.	REMARKS.
		Sa. Rs. As. Ps.				Sa. Rs. As. Ps.				Sa. Rs. As. Ps.	
Brought forward, ..	.....	.....	.....	.....	.....	19936	15	6	.....	1,84,175 1 11	
<i>Judicial Contingent Charges.—(Contd.)</i>	<i>From 1st May, 1835, to 30th April, 1836.</i>										
No. 40.											
Fire Engines. ..											
Repairs,						187	13	9			
New Engine and Hoses,}						410	0	0			
						597	13	9			
Erecting a look-out House,}						21	8	0			
Repairs to Engine House,}						8	5	3	627	11	0
No. 41.											
Petty Charges. ..						624	0	0			
Police Lamps,						100	0	0			
Passage of a Witness,						32	2	0			
Removing Patients,						737	4	0			
Funeral, &c. of Patients,}						181	5	9			
Chopper and building Cess Pools,						51	2	6			
Sign Board,						3	10	3			
Extra Mchtr,						27	5	6			
Fees on Execution of Warrants, ..}						19	11	0			
Cleaning Wells in the House of Correction,}						13	0	0			
Sundries,						68	9	4	1858	2	4
No. 42.											
Rent.						293	11	6			
Of Female Kattarah,						124	0	0			
Sepoy Guard,						52	3	3	469	14	9
Police Ground Tax,											
No. 43.											
Esplanade Roads. ..											
14927 Ferrahs of Khoa,	1653	11	9								
A Kiln of Jhama Bricks,}	481	7	0								
Jhama Kanker for Water gate of the Fort,}	2	12	7								
mds. 15 Chunam for purifying Drain,}	7	3	0								
Bamboos for marking out Roads, ..}	22	0	0								
Kodalies and Weeding Knives,}	33	0	0								
Government Toll for Khoa at Tolly's Nullah, ..}	150	0	0								
						2350	2	4	22892	11	7
Carried over, .....	.....	.....	.....	.....	.....	2,350	2	4	.....	1,84,175 1 11	

An Abstract of Police Disbursements, &c.—(Continued.)

Description.	For what period.	Sa. Rs. As. Ps.			Sa. Rs. As. Ps.			Grand Total. Sa. Rs. As. Ps.			REMARKS.	
Brought forward, ..	....	....	2350	2	4	22892	11	7	1,84,175	1	11	
<i>Judicial Contingent Charges.—(Contd.)</i>												
Hackery hire on Khoa	592	3	10									
Coolies picking roads & repairing, } Hired Bullocks for } Rollers, }	301	9	3									
Landing ballast to protect banks at Hastings' bridge, } Coolies clearing Plain near the river side, }	469	1	9									
Constructing drains to protect the roads at Hastings' bridge, }	74	8	0									
Repairing Children's Walk, } Repairing Balustrade, }	6	4	0									
Ditto, Bridges, ... }	133	7	0									
Covering Aqueducts at the opening of the New road from Govt. House to Kyd Street, ... }	140	1	10									
	116	6	0									
	21	5	10									
	40	10	0									
			1895	9	6							
<i>Establishment under Satham.</i>												
1 Sirdar, at 5 permth. } 30 Coolies, at 3 do. } 1 Sircar, at 10 do. } 1 Mistry, at 6 do. } 1 Sircar at Khoa } Depôt 11 months, }	1329	5	9									
	66	0	0									
			1395	5	9							
			5641	1	7							
Deduct part of Government Toll for which no receipt was presented to the Civil Auditor, } }	21	8	0			5619	9	7				
									28512	5	12	Total Judicial Contingent Charges.
Carried over, ..	....	....							2,12,687	7	1	

An Abstract of Police Disbursements, &c.—(Continued.)

Description.	For what period.	Sa. Rs. As. Ps.	Sa. Rs. As. Ps.	Grand Total. Sa. Rs. As. Ps.	REMARKS.
Brought forward,...	2,12,687 7 1	Most part sanctioned by Government.
Conservancy Contin- gent Charges,	From 1st May, 1835, to 30th April, 1836.				
No. 44. Watering.					
Allowed by Govern- ment, for work- ing the Steam En- gine at Chaund- paul Ghaut, for 12 Months, ... }	at 360 per month,	4320 0 0			
For Watering, 8 Months, }	at 2194	17552 0 0			
Repairing Aqueducts, ....	.....	571 2 1		
New Aqueduct or Tunnel, ..... }	.....	2272 12 2		
			24715 14 3		
No. 45. Lighting.					
307 Lamps at 1 : 11 : 6 per lamp per Month, ..... }	.....	6331 14 0		
Deduct for Lamps not lighted, ... }	.....	196 11 7		
Fixing Lamp Irons and Lamps at the corners of the o- pening of the New cross Road oppo- site Kyd street. }	.....	6,135 2 5		
A Lamp and Lamp Iron at the North east corner of Go- vernment House, }	.....	86 9 8		
		44 4 0			
		6266 0 1			
Further deduction not accounted for }	.....	12 8 0		
			6253 8 1		
No. 46. Draining and Paving by R. Sevestre.					
Draining 8 places, ....	.....	1515 12 1		
Paving 7 places, ....	.....	926 7 4		
			2442 3 5		
No. 47. Government House Sepoys' Tally, ... }	.....	at 24 Rs. per mensem,	288 0 0	
No. 48. Petty charges.					
Mehters,	216 0 0				
Rafts,	385 15 3				
Carried Over,	601 15 3		33699 9 9	2,12,687 6 1	

Most part sanctioned by Government.

An Abstract of Police Disbursements, &c.—(Continued.)

Description.	For what period.	Sa. Rs. As. Ps.	Sa. Rs. As. Ps.	Grand Total. Sa. Rs. As. Ps.	REMARKS.
Brought Over, ...	... ..	.....	.....	2,12,687 7 1	
<i>Petty Charges, (Continued.)</i>	601 15 3				
Crossing Bramny } Bulls,	151 2 0				
Printing Chief Ma- gistrate's Proposals }	40 0 0				
Digging Wells, ...	50 7 0				
Repairing Jackson's Ghaut,	171 7 6				
Ditto Public Tanks, ..	428 13 6				
Do. Wellesly Square Walk,	169 3 10				
Sundries,	5 15 0				
		1,619 0 1			
Town Guard Building,	.... ..	1,805 9 10	3,424 9 11		
No. 49. Office Charges, ..			182 2 3		
No. 50. New Police Hos- pital.					
R. Sevestre's Bill for alterations made in the Pet- ty Court Jail for rendering it suit- able for Patients,	.... ..	1,300 13 10			
Constructing Two Partition Walls —three window frames — & three pairs of Venetians,	.... ..	154 12 5			
Enclosing 2 Pucka sheds with mat Walls, ... ..	.... ..	75 6 4			
Making an opening in the Southern Wall, ... ..	.... ..	30 15 9			
Constructing a Cutcha Pucka Wall, ... ..	.... ..	18 10 2			
Building two por- tions of a Parti- tion Wall, ... }	.... ..	14 12 6	1,595 7 0		
No. 51. Cess Pools. ...	.... ..	.....	
3 Biggahs and 15 Cottahs of Land purchased at Til- gullah, ... ..	.... ..	750 0 0			
Stamp Paper for the Bill of Sale Ditto, ... ..	.... ..	8 0 0	758 0 0	39,659 12 11	Total Conservancy Contingent charges,
Total Judicial & Conservancy charges defrayed } by Government from General Revenue, ... }			Sa. Rs.	2,52,347 4 0	

An Abstract of Police Disbursements, &c.—(Continued.)

Grand Total of Police charges for one year.			Sa. Rs. As. Ps.
Brought over amount of Charges defrayed } by Government from General Revenue, .. }	...	....	2,52,347 4 0
Brought over, from Page 11, amount of } Charges paid out of the Assessment Fund, } or rather charged to the Assessment Fund, }	..	.....	2,83,866 6 6
Total disbursement of the Police for one year, ..		Sa. Rs.	5,36,213 10 6

B.

A Statement of the valuation of Premises in the 1st and 3rd Divisions, from the River Hoogly to Wellington Street, including the New Mint.

No. of Streets	Names of Streets.	Valuation per Mensem.	Tax per Quarter.
<i>3rd Division.</i>			
1	Government Place,	15,120 0 0	2,268 0 0
2	Esplanade Row,	7,764 4 3	1,164 10 4
3	King's Bench Walk,	3,733 5 4	560 0 0
4	Hastings' Street,	3,288 0 0	493 4 3
5	Post Office Street,	2,910 10 4	436 9 11
6	Church Lane,	2,453 5 4	368 0 0
7	Counsel House Street,	2,593 1 1	388 15 7
8	Fancy Lane,	1,054 0 0	158 1 12
9	Wellesley Place,	789 5 4	118 6 8
10	Larkin's Lane,	501 5 4	75 3 4
10½	Beecher's Buildings,	853 5 4	128 0 0
11	Old Court House Street,	5,565 13 10	834 14 1
12	Tank Square,	14,519 5 4	2,177 14 8
13	Hare Street,	3,346 5 4	501 15 3
14	Garstin's Place,	953 5 4	143 0 0
15	Bankshall Street,	2,560 0 0	384 0 0
16	Coilah Ghaut Street,	1,541 5 4	231 3 4
17	Vansittart Row,	496 0 0	74 6 8
18	Dacre's Lane,	1,720 0 0	258 0 0
18½	Waterloo Street,	642 3 3	96 5 4
19	Crooked Lane,	775 7 6	116 5 2
20	Ranamooddy Gully,	2,694 6 5	404 2 10
21	Mangoe Lane,	2,315 13 0	347 5 16
22	Barretto Lane,	381 0 0	57 9 12
23	Mission Row,	2,597 5 4	389 9 12
24	Loll Bazar,	2,039 5 4	305 14 8
25	Cooper's Lane,	290 2 1	43 8 5
26	Cossitollah,	8,009 15 8	1,201 7 7
27	Grant's Lane,	521 9 6	78 3 13
28	Weston's Lane,	518 3 9	77 11 14
29	Zigzag Lane,	1,286 9 6	192 15 8
30	Emambarcy Lane,	1,422 3 6	213 4 13
31	Sooterkin Lane,	499 3 2	74 14 0
32	Meredith Lane,	532 12 3	79 14 11
33	Nuncoo Jemadar Lane,	494 14 11	74 3 12
34	Jebb's Lane,	97 1 1	14 8 19
35	Bow Bazar Lane,	542 14 11	81 6 17
36	Sibtollah Lane,	653 5 6	97 15 16
37	Kenderdine Lane,	662 3 4	99 5 2
38	Gooreemah Lane,	855 12 11	128 5 18
39	Copalleytollah,	1,240 3 9	186 0 11
40	Coiroo Mittoor Lane,	365 14 0	54 13 15
41	Ruffick Serang Lane,	90 10 8	13 9 10
42	Nolhooker Lane,	763 9 10	114 8 7
43	Chandney Choke, 1st Lane,	672 0 1	100 12 11
44	Chandney Choke, 2nd Lane,	427 2 1	64 0 19
45	Ditto Street,	526 2 2	78 14 7
46	Hiddaram Bonnerjee,	481 0 1	72 1 16
47	Molungah Lane,	1,436 7 5	215 6 9
48	Bepareytollah Lane,	287 5 4	43 1 10
49	Emambaug Lane,	1,655 2 4	248 3 13
50	Goomghur Lane,	475 11 7	71 5 8
51	Lollbeharry Takoor Lane,	146 14 11	22 0 6
52	Wellington Street,	412 4 1	61 12 19
53	Ditto Square,	407 7 6	61 1 18
54	New Bow Bazar Lane,	460 4 3	69 0 8
68	Bow Bazar Street,	2,353 4 7	352 14 9
		1,11,799 15 1	16,769 4 19
<i>1st Division.</i>			
Upper North Strand Road—New Mint,		2,133 5 4	320 0 0
Total Amount Co's. Rs.		1,13,933 4 5	17,089 4 19

C.

Statement of the Valuation of Premises in the 2nd and 4th Divisions within the following Boundaries, viz. North, Cotton Street and part of the Muchooa Bazar Road—South, Esplanade Row and part of the Durrumtollah Street—East, College Street and Wellington Street—and West, by the Strand Road, including the New Mint. 28th March, 1837.

Names of the Streets.	Valuation per Mensem.	Tax per Quarter	
<i>2nd Division.</i>			
Strand Road,	2,063 10 5	309 8 13	
Clive Street,	10,900 10 4	1,634 14 1	
Fairlie Place,	3,402 10 6	510 6 5	
Clive Street Ghaut,	1,280 0 0	192 0 0	
Swallow Lane,	674 5 8	101 2 2	
Old Court House Lane,	637 11 8	100 2 9	
Old Court House Corner,	1,070 6 2	160 8 17	
Radah Bazar Street,	4,165 6 10	624 10 14	
Lall Bazar, North Side,	2,018 10 6	302 12 14	
Radah Bazar Lane,	432 7 6	64 13 15	
Durumtollah Street,	2,465 14 8	369 13 7	
Pollock Street,	1,683 4 3	252 7 14	
Sukea's Lane,	1,436 13 10	215 8 2	
Jackson's Ghaut Street,	2,004 11 8	300 10 15	
Old China Bazar Street,	7,001 13 3	1,050 0 7	
Moorghy Hattah Street,	2,308 9 10	345 10 2	
Portuguese Church Lane,	1,424 15 0	213 11 16	
Omrattollah Street,	2,138 6 3	320 11 5	
China Bazar Gully,	1,235 9 5	185 5 6	
Bonfield's Lane,	290 2 2	43 8 6	
Armenian Street,	2,391 10 8	358 11 15	
Govindchund Dhur Street,	337 1 1	50 8 17	
Roopchund Roy Street,	646 14 10	97 0 12	
Comul Nyan ka Bare,	1,323 13 9	198 9 0	
Khongraputty Street,	1,869 4 7	280 3 1	
Cross Street,	3,108 4 8	466 2 2	
Puggeaputty Street,	1,343 15 2	201 8 16	
Monohur Doss Street,	3,369 1 1	505 3 15	
Cotton Street,	1,835 2 5	275 2 15	
Durmahattah Street,	1,769 9 7	265 7 0	
New China Bazar Street,	3,294 15 0	494 3 16	
Lyon's Range,	977 1 1	146 8 19	
Chitpore Road,	6,719 10 4	1,007 13 3	
Chattawallah Gully,	1,540 1 0	230 15 2	
Chunam Gully,	2,299 6 5	344 12 19	
Tiretta Bazar Street,	604 14 10	91 0 7	
Hurrenbarry Lane,	831 7 4	124 11 13	
Colootollah Street,	2,759 2 5	413 12 6	
Sreenath Baboo Lane,	647 12 8	97 2 3	
Gungadhur Baboo Lane,	855 0 8	128 3 10	
Champatollah Lane,	1,296 6 11	194 5 18	
Beebee Rozio Lane,	72 8 7	10 14 0	
Bow Bazar Street,	2,937 15 3	440 9 19	
Ruttoo Sircar Lane,	1,582 4 5	237 3 17	
Durrumtollah Lane,	448 1 3	67 3 0	
Tarachund Dutt Street,	1,003 13 7	1,050 9 11	
Rajmohun Bose Lane,	243 3 3	36 7 9	
Rammohun Ghose Lane,	703 0 10	105 8 6	
Soorty Bagaun Lane,	341 5 6	51 2 15	
Rampersaud Shaw Lane,	325 7 4	48 12 18	
Machooa Bazar Road,	1,043 11 10	156 8 15	
Syed Sully Lane,	464 12 9	69 10 18	
College Street,	1,038 10 7	155 10 8	
Sobaram Bysack Lane,	1,323 12 6	199 15 16	
Teemoo Khansumah Lane,	726 3 5	108 14 3	
<i>4th Division.</i>			
Durrumtollah St. (both sides),	1,00,747 14	15,109 14 4	
	7,266 15	1,090 0 3	
Total,	1,08,014 13 5	16,199 14 7	

Abstract.

	Valuation.	Tax.
Amount of the above in 2d Division, {	1,00,747 14 4	15,109 14 4
Do. Do. 4th Do.	7,266 15 1	1,090 0 3
	1,08,014 13	16,199 14 7
Do. Do. 3d } referred,	1,11,799 15 1	16,769 4 19
Do. Do. 1st } to in	2,133 5 1	320 0 0
	paper B.	
Total Co's. Rs.	2,21,948 1 10	33,289 3 6
The Quarterly Tax of the entire Town is Co's. Rs.		66,484 5 5
The Quarterly Tax within the above boundaries is,		33,289 3 6
or a small fraction more than one-half of the entire Tax.		

JOHN CARR,
Assessor.

D.

The Collector of Assessments' Office Establishment, for July, 1836.

						Co's. Rs.	Sa. Rs.
1 June, 1831.	Mr. J. Carr,	....	....	4½	Pr. Ct.	449 5 12	430 0 0
1 Jan. 1832.	M. R. Graham,	..	..		....	344 13 12	330 0 0
22 July, 1834.	Mr. T. Thompson,	.....			....	137 15 0	132 0 0
12 June, 1836.	Mr. J. Street,	....			....	100 0 0	93 12 0
16 Sept. 1833.	Parbutty Churn Mookerjee,	....			....	73 2 8	70 0 0
Ditto,	Sumbonauth Sain,	....			....	62 11 4	60 0 0
1 May, 1820.	Rajkisser Seat,	....			....	31 5 12	30 0 0
1 August, 1835.	Greeschunder Chowdory, Officiating Writer,				....	15 0 0	14 5 7
1 Dec. 1829.	Esserschunder Bose,	....			....	10 7 4	10 0 0
Ditto,	Tarrucknauth Day,	....			....	15 7 4	14 12 7
Ditto,	Birjomohun Ghose,	.....			....	10 7 4	10 0 0
1 Jan. 1830.	Hurrochunder Bose,	.....			....	10 7 4	10 0 0
1 May, 1831.	Bipprodoss Ghose,	....			....	10 7 4	10 0 0
16 Sept. 1833.	Juggutchunder Mookerjee,	.....			....	20 14 8	20 0 0
1 May, 1834.	Bissonauth Chatterjee	....			....	10 7 4	10 0 0
1 August, 1816.	Bissonauth Dutt,	....			.....	10 7 4	10 0 0
1 May, 1833.	Doyalchaund Banerjee,	.....			....	12 8 13	12 0 0
Ditto,	Comolawchurn Mookerjee,	....			....	12 8 13	12 0 0
15 March, 1825.	Parbuttychurn Bose,	...			....	10 7 4	10 0 0
1 Dec. 1832.	Ramnarain Sain.	....			....	6 4 6	6 0 0
1 Dec. 1833.	Esserschunder Rockit,	....			....	6 4 6	6 0 0
1 August, 1810.	Ethary,	....			.....	7 5 0	7 0 0
1 Feb. 1810.	Choyton,	....			....	4 2 17½	4 0 0
15 March, 1813.	Juggernauth,	....			....	4 2 17½	4 0 0
1 July, 1829.	Connoy Loll,	....			....	4 2 17½	4 0 0
10 June, 1834.	Bissonauth,	....			....	4 2 17½	4 0 0
1 July, 1835.	Bhuggobah,	....			....	5 0 0	4 11 0
	Office Rent,	....			....	156 12 0	150 0 0
						1,547 3 16	1,478 9 2

*E.**from May, 1835, to April, 1836.**Cr.*

Cash Paid to Mr. J. Carr, Salary from March, 1835, to February, 1836, at 430 Rs. per Month, as per Audited Bill Co's. Rs. 4½,	5,160 0 0	
Cash Paid to Mr. R. Graham, Salary from March, 1835, to February, 1836, at 330 Rs. per Month, as per Audited Bill,	3,960 0 0	
Cash Paid to Mr. T. Thompson, Salary from March, 1835, to February, 1836, at 132 Rs. per Month, as per Audited Bill,	1,584 0 0	
Cash Paid to Mr. R. Humphrey, Salary from March, 1835, to February, 1836, at 100 Rs. per Month, as per Audited Bill,	1,200 0 0	
Cash Paid to Native Writers, Salary from March, 1835, to February, 1836, as per Audited Bill,	3,425 14 15	
Cash Paid to 3 Writers and one Mohory, Salary from March, 1835, to February, 1836, as per Audited Bill,	696 0 0	
Cash Paid Office rent, from March, 1835, to February, 1836, at 150 Rs. per Month, as per Audited Bill,	1,800 0 0	
		17,825 14 15
Cash Paid to Collectors' Commission, from February, 1835, to January, 1836, on Sa. Rs. 2,68,467 : 4 : 9½ at 2½ per cent. as per Audited Bill,	6,711 10 17	
Cash Paid to Collecting Sircars' Commission, from February, 1835, to January, 1836, on Sa. Rs. 2,27,046 : 14 : 16 at 1½ per cent. as per Audited Bill,	3,405 11 2	
		10,117 5 19
By Amount Transfer Account of Tax on Honourable Company's Houses, from February, 1835, to January, 1836, .....	....	17,855 11 4
<i>Contingencies.</i>		
By Cash Paid for Bengalee paper and Petty Office Charges, from March to December, 1835, as per Audited Bill, .....	....	486 9 10
<i>General Treasury.</i>		
Amount Paid in Cash into the General Treasury, .....	....	2,12,472 3 17½
	Sa. Ra.	2,58,757 13 5½

Collector of Assessment Office, }
1st May, 1836. }

(Signed) F. W. BIRCH, Collector.

I.

*Cash Account of His Majesty's Justices of the Peace in the ASSESSMENT Department
for the Month of December, 1836.*

Dr.

November 30th,	By Balance brought forward Co's. Rupees	.. .. .	8,555 5 7
<i>To General Treasury.</i>			
December 12th,	Received from General Treasury on account of Establishment Bills not exceeding 5 Rupees, for November, 1836.	8,068 9 11	
Ditto, 21st,	Ditto ditto ditto, exceeding 5 Rupees for November, 1836	4,434 11 1	
Ditto, 17th,	Ditto ditto, by an order on the Sub-Treasurer, No. 25, dated 13th December, 1836.	12,108 0 9	
			26 11 5
<i>Profit and Loss.</i>			
Ditto, 24th,	Received from Sonatun Moochee on account of skinning Dead Carcases, at Necmtollah Ghaut, from 5th September to 4th October, 1836. ... ..	.. .. .	48 0 0
<i>Contingent for September, 1836.</i>			
Ditto, 26th,	Refunded on account of a Bill for advertising, erroneously charged in the account for October last ... ..	.. .. .	7 10 0
	Co's. Rupees,	.. .. .	33,222 6 1

Cr.

<i>By Contingencies.</i>			
December 31st,	Paid amount of Contingent charges for the month of November, 1836 as per list accompanying .. .. .	.. .. .	12,108 0 9
<i>By Establishment.</i>			
	Paid the Salaries of Establishment not exceeding 5 Rupees a month for November 1836	8,068 9 11	
	Ditto ditto ditto, exceeding 5 Rs. for November, 1836	4,434 11 1	
			12,503 5 0
31st,	By Balance, ... ..	.. .. .	8,611 0 4
	Co's. Rupees	.. .. .	33,222 6 1

(Signed)

D. M'FARLAN,

Chief Magistrate.

CALCUTTA POLICE OFFICE,
January 20th, 1837.

J.

Cash Account of His Majesty's Justices of the Peace, JUDICIAL and CONSERVANCY Departments, for the Month of December, 1836.

Dr.

1836							
November 30th,	To Balance brought forward,	Co's. Rs.	42,174	8	0		
	<i>To General Treasury.</i>						
December 2d,	Received from the Treasury by an Order, No. 24, dated 22d November, 1836,		810	3	8		
Ditto, 17th,	Ditto, Ditto, No. 25, dated Ditto,		519	15	9		
Ditto, 14th,	Ditto, Ditto, No. 26, dated 13th December, 1836,		1,916	0	4		
Ditto, 14th,	Ditto, on Account of Establishment not exceeding 5 Rupees a Month, for November, 1836,		1,857	7	10		
Ditto, 21st,	Ditto, Ditto, exceeding 5 Rupees for Ditto,		5,929	11	9	11,033	7 1
	<i>To Fees.</i>						
Ditto, 31st,	Amount of Sundry Fees, collected from the several Divisions in this Month,					764	0 0
	<i>To Fines.</i>						
"	Amount of Sundry Fines, collected in the Judicial Department in this Month,		340	0	0		
	Ditto, Ditto, in the Conservancy, Ditto, Ditto,		376	8	0	716	8 0
	<i>To Profit and Loss.</i>						
Ditto, 5th,	Received from Perallee, fee for making a Pucka Grave for his wife in the Mahomedan Burying Ground,					5	0 0
	Co's. Rs.		51,693	7	4		

Cr.

	<i>By Contingencies.</i>						
December, 31st,	Paid Judicial and Conservancy Contingent Charges for the Month of November, 1836, as per List accompanying,					7,464	11 10
	<i>By Establishment.</i>						
"	Paid the Salaries of Establishment not exceeding 5 Rupees for November, 1836,		1,857	7	10		
"	Ditto, Ditto, exceeding 5 Rupees for Ditto,		5,929	11	9	7,787	3 7
	<i>By Fees.</i>						
Ditto, 8th,	Remitted to the General Treasury on Account of Fees, collected in the Month of October, 1836,					1,005	0 0
	<i>By Fines.</i>						
"	Remitted to the General Treasury on Account of Fines, collected in the Conservancy Department in the Month of October, 1836,		141	0	0		
"	Ditto, to the Clerk of the Crown, on Account of Fines, in the Judicial Department in Ditto,		607	8	0	751	8 0
"	By Balance,	Co's. Rs.	17,008	10	5	37,684	12 11
			54,693	7	4		

K.

Report on the Balance of Assessment Cash on the 30th April, 1831, with a Statement in continuation to 31st December, 1836.

1st. From the earliest recorded accounts of the Assessment Department, viz. September, 1795, up to 8th October, 1808, the charges for Establishment and Contingencies appear to have been defrayed out of the sums paid to the Magistrate by the Collector of House Tax. On the 8th of October, 1808, a balance of Rs. 2,566:0:3 is shewn in the accounts, being the surplus of Receipts beyond Payments for the period above stated.

2nd. Subsequent to this, the Magistrates drew on the General Treasury for sums to meet the Establishment and Contingent charges. Sicca Rupees 1,17,511:5 appear to have been received in that way on account of charges from August, 1808, to March, 1809, inclusive; and Rs. 1,20,077:5:3 appear to have been paid on the same account for the same period—thus the balance of Rs. 2,566:0:3, shewn on the 8th October, 1808, was absorbed.

3rd. From this period to February, 1820, no balance appears in the Magistrate's Accounts. On the 7th February, 1820, an advance of Rs. 1,000 was received from the Treasury.

4th. Between September, 1821, and May, 1822, Rs. 1,370:8:0 appear at credit, on account of Conservancy forfeitures; and Rs. 645, being the aggregate of a deposit of 15 Rs. a month on account of the Boat Establishment for 3 years and 9 months—are at credit under the directions contained in the 122nd paragraph of the Resolutions of Government, under date 17th November, 1821.

5th. The Surplus funds arising from the unexpended portions of the sums received on account of different Publick works amount to Rs. 501:15:2, as detailed in the annexed statement.

6th. On the 5th July, 1827, Rs. 3,000 were received as an advance, to be applied in the manner described in paragraph 8 of the Report on the Balance of the Town Duty Funds.

7th. Rs. 667:8:5 appear to have been brought to credit at different periods on account of the proceeds of the sale of old materials, unserviceable bullocks, &c.

8th. The disbursements on account of Establishment and Contingent Charges from September, 1821, to April, 1831, exceed the amount drawn from the General Treasury on that account for the same period by Rs. 1,218:12:7.

CALCUTTA POLICE OFFICE,
31st October, 1832.

H. C. WATTS,
Head Accountant.

STATEMENT.

			Surplus.	Deficiency.
	Balance on the 8th October, 1808,	2,566 0 3		
	Received from the General Treasury, on account of Establishment and Contingent charges from August, 1808, to March, 1809.	1,17,511 5 6		
	Paid on account ditto,	1,20,077 5 3		
Feb. 7, 1820,	Received an advance.	1,000 0 0	1,000 0 0	
	Conservancy Forfeitures received between September, 1821, and May, 1822.	1,370 8 0	1,370 8 0	
Mar. 13, 1822,	Deposit on account of Boat Establishment.	645 0 0	645 0 0	
June, 1822,	Received and Paid on account of the undermentioned Publick Works.			
	Constructing the Northern Gowkhana.	4,900 0 0		
	Paid on account of ditto.	1,893 8 0	6 8 0	
June, 1825,	For certain alterations to the Overseer's House at the Southern Gowkhana.	1,201 7 7		
March, 1826,	Paid on account of ditto,	1,178 14 5	22 9 2	
August, 1826,	For constructing a Postah Wall in Boita-khanna.	1,298 10 1		
Feb. 1828,	Paid on account of ditto,	935 0 4	363 9 5	
	Carried over.		3,468 2 11	

Report on the Balance of Assessment Cash on the 30th April, 1831, with a Statement in continuation to 31st December, 1836.—(Continued.)

			Surplus.	Deficiency.
	Brought over		3,408 2 11	
Jan. 1827,	For constructing a Police Thannah at Neemtolla	1,872 11 9		
Jan. 1828,	Paid on account ditto.	1,868 5 0	4 6 9	
	Received on account of constructing the Southern Gowkhanna.	13,961 10		
	Paid on account of ditto.	11,622 11		661 1 11
	Received on account of constructing the Overseer's House at the Southern Gowkhanna.	2,450 13		
	Paid on account of ditto.	2,345 15	104 13	
July 7, 1827,	Received an advance.	3,000 0	3,000 0	
	Received on account of sale of old materials, unserviceable Bullocks, &c.	667 8 1/2	667 8	
7/7	Received on account of Establishment and Contingent charges, from September, 1821 to April, 1831.	27,37,412 5		
	Paid on account of ditto.	27,38,361 2		1,418 12 7
			7,181 15	1,479 14 6
	Deduct amount of Deficiency.		1,779 14	
		Sa. Rs.	5,405 1	
	Balance of account on 1st May, 1831, Sicca Rupees	or Co's. Rs.	5,765 5	
	Received on account of Establishment from 1st May, 1831, to 31st December, 1836, Co's. Rs.	8,57,785 6		
	Paid on account of ditto, Co's. Rs.	8,57,785 6		
	Received on account of Contingent charge on 1st May, to 31st December, 1836.	8,17,189 1 4		
	Paid on account of ditto, ditto.	8,16,565 13 9	623 3 7	
	Received on account of Fees for House Tax Summonses from 1st May, to 31st December, 1836.	5,359 10 8		
	Remitted to the General Treasury on account of ditto.	5,359 10 8		
	Received on account of sundry unserviceable bullocks and carts sold at Auction, and for the skinning of carcases at Neemtollah Ghaut		2,168 11 6	
	Received on account of repairs to the Southern Gowkhanna.	1,119 3 5		
	Paid on account of ditto.	1,065 7 7 1/2	53 11 10	
	Received from the Collector of Mymensing.	192 0		
	Paid for 2 Carts sent to ditto.	192 0 0		
	Co's. Rs.]		8,611 0 4	

*M.**A Statement of Total Yearly Charges of the Police of Calcutta, for 1834-35, 1835-36.*

		1834-35.	1835-36.
<i>Chargeable to Assessment Fund.</i>			
Establishment. . .	{ Watering,	1,13,712 0 0	1,12,085 2 1
	{ Cleansing, Repairing, &c.	31,530 0 0	31,530 0 0
Contingent.	{ Watering,	4,475 3 10	6,282 14 0
	{ Cleansing, Repairing, &c.	1,30,483 4 2	1,33,684 1 3
<i>Paid by Government.</i>			
Magistrates Salaries		(not paid from the Police,)	
Establishment. . .	{ Judicial,	71,819 6 10	62,707 9 7
	{ Conservancy,	13,011 14 6	12,560 0 3
Contingent.	{ Judicial,	28,119 14 3	22,909 15 7
	{ Conservancy,	21,093 4 4	19,093 13 0
	{ Esplanade Roads	6,760 8 2	5,921 6

* Exclusive of 'Watering' but including expenses of the Steam Engine.

H. C. WATTS.

N

To D. M. FARLAN, ESQ.

Chief Magistrate of Calcutta.

Judicial Department.

SIR,

I am directed by his Excellency the Right Honourable the Governor General of India in Council, to acknowledge the receipt of your Letter dated the 11th instant, submitting, under the orders of Government of the 10th ultimo, a statement of the total Yearly Expenditure of the Police of Calcutta during the last three years, compared with that of the three years preceding, and exhibiting a net stated decrease of Rupees 63,147:14:10 per annum.

2. In reply, I am desired by his Lordship in Council to observe, that the chief saving apparent from the statement seems to be in the contingencies of the Conservancy Department, but that it is within the knowledge of Government that complaints are prevalent regarding the state of Drains in Calcutta and Chowringhee. It is to be hoped, therefore, that the saving has not been effected by the discontinuance of any of the measures heretofore had recourse to for keeping the Drains in an efficient state, upon which the health and comfort of the inhabitants so materially depend.

I am,

Sir,

Your obedient humble Servant,

(Signed)

W. H. MACNAGHTEN,

Secretary to the Government of India.

COUNCIL CHAMBER.

19th December, 1834.

O.

To W. H. MACNAGHTEN, ESQ.

Secretary to the Government of Bengal.

Sir,

I have the honour to acknowledge the receipt of your Letter of the 19th ultimo, communicating remarks by the Government of India on a Statement of Police Expenditure submitted by me.

2nd. With every desire not to take to myself blame which the Supreme Government may not have been desirous of imputing, I feel it impossible to put upon your Letter any other construction than this—that the Government surmise that I have carried my measures of economy to the extent of neglecting the Cleansing of the Town, and endangering the health and comfort of the inhabitants.

3rd. I feel that I have no right to be disappointed at not receiving the approbation of Government for the saving effected. It was my duty, under my understanding of the views and wishes of Government, to endeavour to effect the saving, and for that duty I am paid; but when there is an implication of blame, I trust I shall be pardoned in entering upon an explanation of the causes of the stated decrease.

4th. What is styled in your Letter the "Contingencies of the Conservancy Department," embraces a great many heads; but only two of them are connected with the state of the Drains, viz. "Repairs of Drains," "and Cleansing the Town"—in the margin is the saving on these two heads.

	<i>Cleansing the Town.</i>	<i>Repairing of Drains.</i>	
1828-29)	2,54,188 12 3	685 12 8	
to 1830-31)			
1831-32)			
to 1833-34)	2,31,658 5 2	28,905 12 9	

5th. The small difference in the Repair Bills, amounting to 5,000 Rs. per annum, is owing partly to a reduction in the rate of building, and partly, I trust, to a more searching inquiry into the reality of repairs billed for, and the necessity of works proposed. I would not be understood to praise myself at the expense of my predecessors, but it was contemplated as a part of the new system that the daily attendance of the Chief Magistrate at the Office and in the Town, would enable him to do more in this way than heretofore.

6th. In regard to the Cleansing Contingencies I remark, that the strength of labourers and bullocks, &c. kept up in the last three years has actually been increased compared with the three preceding. Annexed is a Return on that head.

7th. The reduction in expense is effected by a reduction in the Contractors' rates of supplying coolies and cattle as per margin, and also by the gradual discontinuance of Company's bullocks, (that are bought and fed by the Police,) and the employment of contract ones at a cheaper rate.

	<i>Former rate</i>	<i>Present rate.</i>	
Coolies.....	3 12 per month.	3-8	
Huckeries.....	10	9-1	
Bullocks.....	15	11-8	

A Saving of about Rs. 2,400 per annum on the same strength of Establishment, is effected by the reduction of the rates.

8th. The Establishment maintained for this purpose is nearly the same as it used to be, and I greatly mistake if there is any falling off in the activity of those establishments.

9th. The ground upon which the Government felt it necessary to express the hope above referred to is, that complaints are made of the state of the Drains. I am sure I never knew the time in which such complaints were

not made, varied, of course, in intensity, by circumstances, such as the state of the weather, the peculiar qualifications of the Overseer for the time being in any given quarter, and the rank and disposition of complainants who happened at any given time to be annoyed by them; perhaps I may add, the absence of any other more serious cause of complaints at the time. Of this I am quite sure, that so long as the cook-room-washings of every man, high and low, are thrown out before his door into an open Drain, there to evaporate, or be slowly washed from door to door by some Bhistee with his water-bag, the sense of smell will continue to be as grievously offended as it is now.

10th. I am very far from saying that nothing can be done for the Drains, and should hail with the liveliest satisfaction an intimation that funds were forth-coming from any quarter to effect the improvements I desire; but to enter upon this matter here would be foreign to what is intended as a mere letter of explanation. I trust I may be allowed to assure the Government that my desire to meet their declared wishes, on the head of economy, will not induce me to cripple the efficiency of any Department without at least giving them the most ample warning.

I have the honour to be,

Sir,

Your most obedient Servant,

(Signed) D. M'FARLAN,

Chief Magistrate.

CALCUTTA POLICE OFFICE,

2nd January, 1835.

Hackeries and Coolies employed under the Scavengers.

1828-29	..	..	..	..	66,159	12	1
1829-30	..	..	..	..	67,608	8	6
1830-31	..	..	..	..	72,896	11	9

Rs. .. 2,06,665 0 4

1831-32	..	..	..	..	74,781	5	9	Rates reduced at the latter end of 1831-32
1832-33	..	..	..	..	73,615	10	0	
1833-34	..	..	..	..	66,748	12	11	At the old rates the expense for the same Establishment would have been about 69,000.

Rs. .. 2,15,145 12 8

True Copies,

(Signed)

D. M'FARLAN,

Chief Magistrate.

P.

A Statement of the Watering Fund from 1831-32 to 1835-36.

Total amount of savings of the Watering Fund from 1831-32 to 1835-36, inclusive		Co's. Rs. ..	25,897 10 9
<i>Appropriated as follows.</i>			
Additional Reservoir at Chandpaul Ghaut,	1,629	8 9	
Ditto, at the North East Corner of Durumtollah Road,	583	3 11	
2 Screw Valves for the New Reservoir at Chandpaul Ghaut,	463	6 0	
Connecting Pipe from the Old to the New Reservoir,	745	8 7	
6 Small semi-circular Reservoirs on the side of the Aqueduct, Chowringhee Road,	231	13 2	
A set of 4 horse-power Forcing Pumps and fitting ditto to the Steam Engine,	6,451	3 2	
Estimated Cost of the Aqueduct in Park Street,	2,098	4 4	
Ditto, of the Aqueduct in Bow Bazar,	6,849	7 2	
Ditto Ditto, in Chitpore Road,	4,803	11 6	
			23,856 2 7
	Surplus, Co's. Rs.	.. .. .	2,041 8 2
The Aqueducts have been completed but the Bills have not yet been made out. The cost I understand, is likely to fall short of the Estimates.			
<i>Chitpore Road Watering Subscription.</i>			
Paid to the Government Agent by the Lottery Committee,	Sa. Rs.		31,850 0 0
Interest thereon,			6,067 8 0
Premium on Sale of Company's Paper,			481 0 0
Interest on Ditto,			72 5 9
Amount of Company's Paper sold,			12,400 0 0
	Sa. Rs.	.. .. .	50,870 13 9
<i>Disbursed.</i>			
Government Paper purchased,	32,700	0 0	
Interest paid thereon,	189	2 8	
Premium Ditto,	1,287	0 0	
Government Agent's Commission,	127	2 11	
Ditto Brokerage,	17	0 0	
Deposit Fees,	17	0 0	
Renewing Company's Paper,	7	0 0	
To D. M'Farlan, Esq., on account of a Tank in Burtollah,	11,850	0 0	
— Ditto on account of expenses Watering Chitpore Road,	4,911	4 0	
	Sa. Rs.	.. .. .	51,105 9 7
Cash Balance against the Fund,			234 11 10
<i>Memorandum.</i>			
Amount Government Paper purchased,	Sa. Rs.	32,700 0 0	
Ditto Ditto sold,		12,400 0 0	
Balance with Government Agent,		20,300 0 0	at 5 per cent.

H. C. WATTS.

Q.

A detailed Statement of the Origin and Progress of the Abkaree Tax.

To S. PALMER, ESQ.,

Acting Secretary, Board of Customs, Salt, and Opium.

SIR,

I have the honour to acknowledge the receipt of your Letter of the 4th July, 1835, forwarding a Letter dated the 18th June, 1835, to the address of Mr. D. M^r Farlan, Chief Magistrate, accompanied by a letter from Mr. Secretary Bushby, and Mr. M^r Farlan's answer, desiring me to consider the above as being addressed to myself, and furnish the information called for with respect to the Abkaree Mehal of the Town of Calcutta, and beg leave to submit the following detail of its Rise and Progress, for the information of the Board of Customs, Salt, and Opium.

1st. The Abkaree Mehal appears to have been first placed under a system of License in the Town of Calcutta, in the year 1794, by Sir John Richardson and other Justices of the Peace, in conformity with Sec. 159, Chap. 52, of an Act passed in the 33d year of the reign of George the Third, and the sanction of Government, conveyed in their Letter dated the 27th January, 1794, nominating Sir John Richardson and others Justices of the Peace for the Town of Calcutta, of which Act and Letter the following are extracts.

Extract from the 33d of Geo. III, Chap. 52. CLIX. " And be it further enacted, that it shall not be lawful for any person or persons to sell any Arrack or other spirituous Liquors within the Towns or Factories of Calcutta, Madras, or Bombay respectively, without a License for that purpose, under the hands and seals of two or more of the Justices of the Peace having jurisdiction; and that the powers and authorities vested by any Laws or Statutes now in force in that part of Great Britain called England, in any Justices of the Peace for restraining the inordinate sale of spirituous Liquors, shall extend to, and be put in force, against all unlicensed traders in Spirits or spirituous Liquors, within the said Towns and Factories respectively, by the Justices having jurisdiction therein."

Extract from a Letter of Government directed to Sir John Richardson, Baronet, and others, nominating them Justices of the Peace for the Town of Calcutta, dated the 27th January, 1794.

" From the confidence we repose on your skill and abilities, we have thought proper to appoint you Justices of the Peace for the Town of Calcutta, agreeably to the authority vested in us for this purpose, by the 151st clause of the Act passed in the 33d year of the present reign. Chap. 52."

" By the prescriptions in the Act, it will not be lawful for any person or persons to sell Arrack or other spirituous Liquors, within the limits of the Town of Calcutta, without a License under the hands and seals of two or more of the Justices of the Peace having jurisdiction. The unrestrained sale of spirituous Liquors is justly deemed a nuisance of the greatest magnitude in this Metropolis, and productive of numerous evils; and we cannot but express our sincere satisfaction that the Legislature has authorized the means of correcting the above. To prevent it entirely may be impracticable, but it may be greatly checked by limiting the number of the venders of Arrack and spirituous Liquors, and by requiring such as may be licensed to pay for their licenses, which we are of opinion should not be granted for more than twelve months. The amount so received for Licenses should be paid weekly or monthly into the Company's Treasury."

It next appears, that in or about the month of July, 1794, the said Justices of the Peace framed Regulations for the retail vend of country-made spirits, called Doosta, or Bengal Arrack, declaring that quarterly Licenses should be granted to the venders thereof, and that the fee upon each License granted should be at the rate of one Rupee Eight Annas Sicca per diem, or 136 : 14, per quarter; and that one-third of the quarterly rates, or Sicca Rupees 45 : 10, should be paid monthly

in advance, which rate so fixed, it appears continued in force as long as the above Commission of the Peace remained extant, that is until the year 1800, when in the month of April of the said year, a new Commission of the Peace was issued, nominating Mr. Charles Fuller Martyn, one of the former Justices, Mr. Macklew, Mr. Thoroton, and myself, to be Justices of the Peace, and the charge of the Abkaree Mehal (or what was then called the License Department) devolved upon us in succession to the former Justices, and conformably with the Act before mentioned.

On taking charge of the Department in April, 1800, we found the retailers of native spirits and Punch House-keepers paying a daily retail duty of 1-8, as fixed by our predecessors, and that the produce of their last year, that is 1799 and 1800, amounted to 52,312 : 6.

In the month of June, 1800, we raised the License fee to Rs. 2-3 per diem, and restrained the quantity for daily consumption by each retailer to 12 gallons.

On the 1st of January, 1801, we raised the daily rate to 5 Rupees per diem ; the result of which was a produce of Sa. Rs. 67,577 in 1800-1, and in the year 1801-2, Sa. Rs. 99,108 : 10.

In September, 1808, the duty was raised to 6 Rupees per diem, being 8 annas per gallon under the above mentioned restriction, at which rate it has continued to be levied to the present time.

In September, 1802, a duty of 3 annas per gallon was fixed upon the vend of Brandy, Gin, and other European spirits, the levy of which in the warehouses of Merchants being attended with difficulty and vexation, was by their desire transferred to the Wharf, and this duty has been since levied there, on the importation of the spirit, leaving the Merchants subject to only a quarterly fee of 4 Rupees, for a License to dispose of the same by wholesale.

In the year 1802-3, the Native shopkeepers in the Radha Bazar, about twelve in number, dealing in Bengal Rum, were required to take out Licenses for vending the same, paying five Rupees per diem for the privilege of so doing ; which shops were allowed to deal also in Brandy, Gin, and European Spirits, which came taxed to their shops, having paid 3 annas per gallon on the Wharf at the time of importation, as before stated.

In August, 1803, the vend of Taury and Gunja was brought under the License system, and a License duty of one Rupee per diem fixed on the vend of Taury, and a duty of 2 Rupees per diem on the vend of the intoxicating drug called Gunja.

In November, 1808, on the abolition of the office of Superintendent-General of Police, and nomination of Mr. Guthrie to the offices of Superintendent of Police, Magistrate of the 24 Pergunnahs, and Justice of the Peace for the Town of Calcutta, Government were pleased to place the Abkaree Department (the details of which had been previous thereto principally under my guidance) under my exclusive controul ; and signified to the Calcutta Magistrates, in a Letter dated the 4th November, 1808, that the commission of 10 per cent, then received by them on the produce of the duties levied on Spirits, Drugs, and Taury, should be discontinued, and the ordinary details of that duty be vested in one of the Magistrates, and that he should receive as a compensation for his trouble a commission at the rate of 2½ per cent, and that as a compensation for the loss suffered by the Magistrates, Government had been pleased to fix their salaries at 1,400 each, in lieu of the former salary of 800 Rupees per month, and that the Governour General in Council desired that the collection of the duties on Spirits, &c. might be entrusted to Mr. Blaquiére on the footing above stated ; since which time I have held the sole charge of the Abkaree Mehal, in all its branches.

Having concluded the detail of the Rise and Progress of the Abkaree Mehal in the Town of Calcutta, I beg leave to submit the following answers to the queries contained in your Letter.

1st. The total amount of Revenue from the Abkaree Mehal of the City of Calcutta, for the past five years, that is from the 1st May, 1830, to the 30th April, 1835, amounted to Sicca Rupees 8,50,158 : 9.

2d. The said Revenue is classed under the three following heads :

					Sa. Rs.	As.
Fees on Spirituous Liquors,	.....	....	..	....	7,51,507	9
Fees on Taury,	....	....	....	....	67,225	0
Fees on Gunja,	....	....	....	....	31,426	0

Sa. Rupees 8,50,158 9

3d. The mode adopted with the proprietors of Native shops, is to grant them Licenses for the term of three months whenever applied for.

4th. The same mode is adopted with respect to keepers of Punch Houses (Tavern keepers are not required to take out Licenses.)

5th. The illicit manufacture of the native spirit in use, which is called Doasta, or Bengal Arrack, is prevented by the Establishment of a spacious Distillery at Soora, in the suburbs of the Town, where all the native spirit consumed in the Town is manufactured (under the controul and supervision of Native officers on my part) at Stills appertaining to the licensed retailers. The illicit introduction of native spirits into the Town, is prevented, by none being allowed to quit the above Distillery in the first instance, without a Pass bearing my signature; and secondly, by none being allowed to enter the limits of the Town without the production of the said Pass. The illicit vend of native spirits is prevented, by the sale being confined to licensed shops, and a general system of surveillance on my part, and vigilance on the part of the officers of the Abkaree Department, aided by those of the Police in preventing the same, and the infliction of fine or imprisonment on conviction thereof.

6th. I am not of opinion, that it would be practicable to farm the Abkaree Mehal in the several quarters of the Town with benefit to the Revenue thereof, or the good order and peace of the Town; on the contrary, I am of opinion it would tend greatly to the detriment and injury of both. The amount realized during the last five years was Sa. Rs. 8,50,158:9, and the monthly charge incurred by so doing Sa. Rs. 531, making Sa. Rs. 6,372 per annum, and for the said five years Sa. Rs. 31,850, being a charge of about Sa. Rs. 3:12:3 per cent, making, with my commission of 2½ per cent, 6:4:3 per cent, about one half of the charge attendant upon the realization of the Assessment of the Town of Calcutta.

7th. The licensed Dealers in native spirits, are supplied with spirits distilled at their respective Stills at the Soora Distillery before mentioned, under the controul of officers stationed there on my part.

8th. A tax of 2 Rupees per diem is levied on the sale of Gunja, but on no other intoxicating Drugs in the Town of Calcutta.

9th. A tax of 1 Rupee per diem is levied on the sale of Taury in the Town of Calcutta, but not upon Putchways which is not sold in the Town.

10th. Licensed venders of native spirits pay at the rate of six Rupees per diem, or 8 annas per gallon, for the privilege of retailing daily twelve gallons of native spirits, manufactured at the Soora Distillery, in their respective shops in the Town of Calcutta.

11th. The check upon the introduction of spirits manufactured, according to the European process, at the Distilleries under my controul at Fort Gloucester and Sookchur, called Bengal Rum, is maintained by an observance of the same system of surveillance as is observed at the Soora native Distillery, and not allowing any spirits to be removed from those Distilleries, or introduced into the Town, without a Pass under my signature. Spirits manufactured at the Dhoobah and other Distilleries beyond the limits of my controul, are passed into the Town under certificates of the payment of the Still-head Duty from the Collectors of the respective Zillahs in which it is manufactured.

12th. The unlicensed retail vend of Bengal Rum is checked by being confined to licensed shops situated in the Radha Bazar, paying 5 Rupees per diem, and the general system of surveillance and vigilance observed in the prevention of the illicit retail vend of native or other spirits in the Town, and the infliction of fine or imprisonment on conviction thereof.

13th. The following Establishment is kept in the Abkaree Department, and the duties of each officer are specified opposite their respective names.

Mr. David Andrew,

Commula Caunth Gangolly,

Bissonaut Daas, . .

Ramjoy Mookhurjee.

Nilmony Mookhurjee,

Mertonjoy Bonnerjee,

Head Clerk.—The duty of the Head Clerk is to keep the Accounts of the Abkaree Department, and a vigilant eye over the realization of the Revenue in all its branches.

Writer.—To assist Mr. Andrew in the performance of his duty.

Writer.—The same.

Cash-keeper.—To take charge of the Cash as paid in, and transmit the same to the General Treasury.

Bengal Mohurer, to assist the Cash-keeper.

Ditto, ditto.

Ramrutton Ghose,	...	....	Sircar stationed on Wharf, to record all Spirits imported.
Gobind Chunder Ghose,	..	....	Bengal Writer.—To write out Bengallee Passes for Spirits, Taury, &c.
Nobin Chuckerbutty,	.. ..	....	Bengal Writer.—The same and other miscellaneous duty.
Eight Sircars,	. . . .	....	Six stationed at different parts of the Boundary of the Town, to guard against the illicit introduction of Spirits into the Town.—One is stationed at the Soora native Distillery to supervise the distillation and transmission of spirits from the Distillery to the Town—one is employed at the Office in writing out English Passes, and other miscellaneous duties.
1 Jemadar,	.. ..	..	Stationed at the Soora Distillery.
4 Peons,	.. .. .	..	Two stationed at the Soora Distillery.—Two in the Town to watch over the conduct of the Native retailers, and report all irregularities.
12 Peons,	.. . . .	..	Four are stationed in the Radha Bazar to watch over the conduct of the Radha Bazar licensed venders, &c. Two are stationed on the Wharf, with Ramrutton Sircar, before mentioned. The remaining six attend daily at the Office, and are employed, as occasion requires, in the execution of the orders of the Head Clerk, in furtherance of the general objects of the Department.
1 Jemadar,	. . . .	...	To controul the above Peons.
1 Poddar,	.. . . .	.	To examine the money as paid in.
1 Duftory,	.. . . .	...	The usual duties of a Duftory at the Office.

The salaries of the above Establishment amount to Sa. Rs. 531 per mensem.

14th. There are no licensed venders of Opium in the Town of Calcutta, nor is there any rule or regulation in force against the sale thereof without license.

15th. The licensed dealers in Spirits, whether Native or European, pay their License fees in advance monthly, and enter into recognizances, with two sureties, at the time of receiving their licenses, that they will do so, and maintain peace and good order in their respective shops, &c.

16th. Balances seldom occur, as the duty is payable in advance, but where through indulgence the said rule has not been rigidly enforced, and any vender allowed to fall into arrear, it is recovered by the adoption of lenient measures.

17th. Security is not taken from European wholesale venders, as they are not subject to the payment of license duties, but only to a quarterly fee of 4 Rupees for their License, which is always paid with regularity. There are no European retail venders except Punch-House keepers, who enter into the usual recognizance with sureties. Tavern keepers pay no License, the Magistrates differing in opinion as to the extent of their liability to do so.

18th. The sale of Wines is not subject to any restriction by law in the Town of Calcutta. All wholesale dealers in spirits are required to take out Licenses, for which they pay 4 Rupees per quarter, by which they are restricted not to sell any quantity under two gallons, which is so seldom attempted by wholesale venders, as not to require the adoption of any measures beyond the general system of vigilance to check the same.

19th. The licensed retail vender of the Native spirit called Doasta, was originally restricted to the sale of that article alone, but since the duty was raised to the high rate of six Rupees per day, or 8 annas per gallon, in September 1808, he has been allowed to sell Bengal Rum, European Spirits (Wines and Beer) without any further charge for the same; but the quantity is very small, and too trifling to be an object worthy of notice, the generality of Natives preferring the Native spirit called Doasta, to Bengal Rum, or the European Spirit. The Native Dealers who retail Rum in shops in the Radha Bazar, paying a duty of 5 Rupees per day as before stated, are allowed to deal also in Gin, Brandy, and other European Spirits without further taxation, the same having paid an Import Duty of 10 per cent on English, and 20 per cent on Foreign, Bottoms to the Custom House, and 3 annas per gallon to the Abkaree Department, amounting together to more than 6 annas per gallon, the rate of Still-head Duty levied on Bengal Rum.

20th. The venders not being restricted to the vend of particular liquors, for the reasons before stated, in answer to the last Query, it is not necessary to entertain Inspectors to ascertain the different descriptions of liquors sold.

21st. The certificate of a Mofussil Collector, stating that the Still-head has been paid upon the spirit which accompanies it, is not considered sufficient to entitle the holder to sell such spirits by wholesale and retail in Calcutta without a License to that effect.

22d. The Abkaree Boundaries of the City are confined to the limits of the Jurisdiction of the Supreme Court.

23rd. European venders, such as Tulloh and Co., and Mackintosh and Co. sell spirits under wholesale Licenses, Gunter and Hooper, and other Tavern keepers have not been required to take out Licenses for the reasons before stated in answer to the 17th Query, and I have already stated that the law gives no controul over the sale of Wines.

24th. The number of Licensed Venders now paying the Abkaree Revenue is as follows :

Keepers of Taverns,	....	....	....	None Licensed.
Keepers of Punch Houses,	....	....	....	5
Venders of European Spirits not Tavern keepers,	....	....	....	89
Native Venders of Native and European Spirits,	....	....	....	None Licensed.
Native Venders of Native Spirits only, [N. B. Allowed to sell European Spirits in small quantities.]	....	....	....	53
Native Venders of Bengal Rum and European Spirits,	....	....	....	8
Native Venders of the intoxicating Drug called Gunja, the only intoxicating drug sold under License,	....	....	....	8
Native Venders of Opium,	....	....	....	Unknown.
Native Venders of Taury,	....	....	....	43

25th. The proceeds of the Calcutta Abkaree Mehal are paid into the General Treasury, monthly. The Revenue Accountant has never exercised any controul over the Magistrates or Magistrate in charge of the License Department, Government having hitherto relied on them, and him, for the accuracy of the Returns made, and accounts rendered.

26th. Settlements are not concluded annually, or at any fixed periods with the licensed Dealers, &c. under present system.

27th. Stills are strictly prohibited within the limits of the Town, and it is considered the duty of every officer of the Police, as well as those of the Abkaree Department, to report their existence, if such ever occurred ; but no officer would be empowered to enter and search houses of illicit Stills on his own authority, without a warrant from a Magistrate.

28th. In the event of any illicit manufacturer or vender of spirits (say European) being detected, and the fine no being paid, he would be subject to the penalties laid down for such offences by the Law of England, which declares that persons retailing without License shall forfeit 10 pounds, and on non-payment thereof, be committed to the House of Correction to be kept at hard labour for two months, or till paid.

29th. The Law would be the same with respect to a Native.

Before concluding, I beg leave to crave the attention of the Board to the following statements.

First statement, shewing the amount of Receipts in the License Department, from the time at which duties on spirits were first levied under the Act of Parliament passed in the year 1793, during the six years' administration of Sir John Richardson and other Justices of the Peace,

Viz.

From 1st July, 1794 to 30th April, 1795	....	....	....	41,360	10	0
From 1st May, 1795 to 30th April, 1796	....	....	....	49,844	2	0
From 1st May, 1796 to 30th April, 1797	...	....	....	50,008	4	0
From 1st May, 1797 to 30th April, 1798	....	....	....	47,531	8	0
From 1st May, 1798 to 30th April, 1799	...	....	....	50,144	2	0
From 1st May, 1799 to 30th April, 1800	....	....	....	52,312	6	0

Sa. Rs. 2,91,201 0 0

Second statement, shewing the amount of duty on spirits realized by W. C. Blaquiere and other Justices of the Peace during the first six years of their being in charge of the License Department.

On Spirits.

From 1st May, 1800 to 30th April, 1801	....	....	Sa. Rs.	67,577	0	0
From 1st May, 1801 to 30th April, 1802	....	....	....	99,108	10	0
From 1st May, 1802 to 30th April, 1803	....	....	....	1,13,534	2	3
From 1st May, 1803 to 30th April, 1804	...	....	....	1,19,302	7	6
From 1st May, 1804 to 30th April, 1805	.....	.....	....	1,22,611	4	3
From 1st May, 1805 to 30th April, 1806	.....	.....	....	1,60,275	12	9

Excess Sa. 3,91,208 4 0

Sa. 6,82,409 4 9

To which is to be added the duty levied on Taury and Gunja during latter three years, viz.

	<i>Taury,</i>	<i>Gunja,</i>	
From August, 1803 to 30th April, 1804..	14,113 8 0	4,793 0 0	
From 1st May, 1804 to 30th April, 1805..	19,800 4 0	5,118 0 0	
From 1st May, 1805 to 30th April, 1806..	21,003 4 0	4,409 8 0	
	54,917 0 0	14,320 8 0	69,237 8 0
Total Excess Sa. 4,70,445 12 9			Sa. 7,61,646 12 9

Third statement, the amount realized during the last six years has been Sa. 10,43,494 11 6

Excess above Sir John Richardson, &c. Sa. 7,52,293 11 6

Recapitulation.

Sir John Richardson, &c. six years,	..	..	2,91,201	0	0
W. C. Blaquiere, &c. first six years.	..	..	7,61,646	12	9
W. C. Blaquiere, &c. last six years.	...	...	10,43,494	11	6

I cannot conclude, without soliciting the Board to accept a thousand apologies on my part, for the delay which has occurred in complying with their wishes, which I fear has been but imperfectly done in the foregoing ; and expressing my readiness to furnish such further information as may be required after perusal thereof, and willingness on all occasions to render my services useful when honoured with their commands.

I have the honour to be, &c.

CALCUTTA POLICE OFFICE.
March 11th, 1836.

(Signed) W. C. BLAQUIERE,
Magistrate.

S. 6.

*Memorandum of the outstanding Balance in the License Department on the
31st August, 1836.*

	Recoverable.	Sicca Rupees.
Of these Balances Sa. 5,900 has been paid in; the re- mainder is in a train of daily payment.	Bengal Arrack Shops,.....	25,683 8 0
	Bengal Rum Shops,.....	2,574 0 0
	Gunja Shops,.....	1,418 0 0
	Taury Shops,.....	1,705 0 0
	Punch Houses,.....	450 0 0
	Sicca Rupees, ..	31,830 8 0
	Doubtful.	
	Bengal Arrack Shops,.....	7,224 0 0
	Taury Shops,	1,127 0 0
	Sicca Rupees. ..	8,351 0 0

POLICE OFFICE,

14th September, 1836.

T.

An Abstract of Fees, Fines, and Escheats, levied at the Calcutta Police for 5 years.

Fees.	Amount.	Fines.	Amount.	Escheats.	Amount.
1st May, 1831, to } April, 1832,..... }	8,229 4 0	1st May, 1831, to } April, 1832,..... }	7,027 8 0	1st May, 1831, to } April, 1832, .. }	189 6 0
1st May, 1832, to } April, 1833,..... }	9,124 10 0	1st May, 1832, to } April, 1833,..... }	5,562 10 0	1st May, 1832, to } April, 1833, .. }	141 6 0
1st May, 1833, to } April, 1834,..... }	10,062 0 0	1st May, 1833, to } April, 1834,..... }	4,231 14 9	1st May, 1833, to } April, 1834, .. }	858 10 0
1st May, 1834, to } April, 1835,..... }	10,998 0 0	1st May, 1834, to } April, 1835,.... }	6,560 0 6	1st May, 1834, to } April, 1835, ... }	5,326 0 6
1st May, 1835, to } April, 1836,..... }	10,735 5 0	1st May, 1835, to } April, 1836,..... }	6,791 8 10	1st May, 1835, to } April, 1836, ... }	
	<hr/> 49,149 3 0		<hr/> 28,223 10 1		<hr/> 7,015 6 6

U.

*Statement of the Profits of each Lottery, and the expenses of the Establishment and
Contingent for the last 12 years.*

(Prepared for the Committee of the Municipal Inquiry.)

	Profits from the year 1825 to 1836.	Expenses from the year 1825 to 1836.			Loss.
1st Lottery of 1825, . . . 45,200		Establishment,	21,924 0 0		
2d Ditto ditto ditto, ... 1,00,000		Contingent,	4,613 1 9		
	1,45,200			26,537 1 9	
1st Ditto ditto 1826, . . . 98,200		Establishment,	18,940 12 3		
2d Ditto ditto ditto, . . . 1,00,000		Contingent,	4,623 10 0		
	1,98,200			23,564 6 3	
1st Ditto ditto 1827, . . . 1,00,000		Establishment,	17,724 0 0		
2d Ditto ditto ditto, . . . 80,550		Contingent,	4,701 14 0		
	1,80,550			22,425 14 0	
1st Ditto ditto 1828, . . . 55,560		Establishment,	17,724 0 0		
2d Ditto ditto ditto, . . . 52,710		Contingent,	4,797 1 0		
	1,08,270			22,521 1 0	
1st Ditto ditto 1829, . . . 60,000		Establishment,	16,462 11 3		
2d Ditto ditto ditto, . . . 60,000		Contingent,	4,594 13 9		
	1,20,000			21,057 9 0	
1st Ditto ditto 1830, . . . 60,000		Establishment,	11,724 0 0		
2d Ditto ditto ditto, . . . 36,690		Contingent,	5,441 14 9		
	96,690			17,165 14 9	
1st Ditto ditto 1831, . . . 91,423		Establishment,	11,724 0 0		
2d Ditto ditto ditto, . . . 62,536		Contingent,	6,486 4 9		
	1,53,959			18,210 4 9	
1st Ditto ditto 1832, . . . 18,126		Establishment,	12,101 0 0		
2d Ditto ditto ditto, . . . 72,960		Contingent,	5,942 5 3		
	91,086			18,043 5 3	
1st Ditto ditto 1833, . . . 31,804		Establishment,	11,347 0 0		
2d Ditto ditto ditto, . . . 25,115		Contingent,	6,478 14 8		
	56,919			17,825 14 8	
1st Ditto ditto 1834, . . . 37,575		Establishment,	12,101 0 0		
2d Ditto ditto ditto,		Contingent,	6,470 7 6		
	37,575			18,571 7 6	9,135
1st Ditto ditto 1835, . . . 37,004		Establishment,	11,712 14 6		
2d Ditto ditto ditto, . . . 1,230		Contingent,	7,132 8 10		
	38,234			18,845 7 4	
1st Ditto ditto 1836, . . . 35,895		Establishment,	Co's Rs. 12,035-12		
2d Ditto ditto ditto, . . . 9,615		Contingent,	„ 6,904-15		
	45,510			18,940 11 0	
Total Profits,	12,72,193	Total expense...	2,43,709 1 3		

X.

Copy of the Superintendent of Police's Report to the Governour General respecting the River Police, dated 29th September, 1836.

The Chamber of Commerce has at last come forward with a recommendation to Government to establish a more efficient system of River Police. It has recommended, as I understand, the appointment of an additional Magistrate to decide all cases of River offences, and of course with an Establishment of some extent under him to enable him to enforce the authority with which he is intended to be vested.

I conceive that this mode would be found too costly, more so than the occasion warrants ; and I venture to hope that the plan I am about to recommend to your Lordship's attention, will be found sufficiently adequate to repress the existing evil, without entailing any great expense on the Government or the Mercantile Community—A moderate addition to the present Police Establishment connected with the River—An extension of power to the Superintendent of Police—And the application of the provisions of the 2nd Geo. III. Chap. 28 to boats of all descriptions plying on the River within the jurisdiction of Calcutta, together with the registration of Coolies or Hackeries—would be found sufficient.

From the want of Docks and Quays, the Shipping frequenting this Port are obliged to discharge their cargoes into Bhurs or Lighters, and goods are exposed to plunder in various stages—In discharging and receiving cargo—in transit to and from the Wharfs—in remaining often (of necessity) in the Bhurs from a late hour in the evening until the opening of the Custom House the following morning—and in transit to and from the Custom House on Coolies and Hackeries.

In all these stages there are a number of delinquents on the look out for plunder, who avail themselves of every opportunity of abstracting goods, and who have every facility in doing so, in the want of any adequate means to the Police of identifying the culprits in the numerous receiver's shops, none of whom are licensed, and whom the law can seldom reach—and but too often in the culpable connivance of the native Sirkars and Burkandozes to whose care the property has been intrusted by the owners.

The Bhurs and Lighters are, with very few exceptions, the property of persons living on the opposite side of the River, and beyond the jurisdiction of the Calcutta Police. They are let out by the owners to sets of one Manglee or helman, and four Dandies or rowers, at the rate of about 6 Rupees per mensem, and a share of the plunder made. The greater part of the pillaged property is taken to the other side of the River and divided ; it is then sent into the Interior, or advantage is taken of the dark nights to land what may be saleable in Calcutta.

In receiving or discharging cargo, an extra piece or package is endeavoured to be conveyed into, or retained by, the boat alongside ; if immediately discovered, it is only a mistake ; if the boat once leaves the ship without discovery being made, there is no possible means of recovery, seldom even of tracing the property, from the difficulty of identification.

In transit to and from the Wharfs bales and packages are opened, and portions of the contents abstracted, a little and a little from each ; the openings are carefully reclosed, and on delivery the tale being complete no suspicion is formed. On opening the package a brick or a piece of wood which has been inserted to make up weight is found, and it is then too late to remedy the theft.

Ships often continue to discharge cargo until a late hour in the day, as of course they cannot afford to strike work where both men and boats are hired by the day, because the Custom House is shut. The consequence is, that the boats either remain alongside the ship all night, or put to the shore until morning. In either case the opportunity of abstracting

property is too good to be lost. If alongside the ship, the smaller boats are in attendance to carry off the plunder—if in shore, the plunder is quickly run up to some receiver, in whose hands it does not remain beyond the time sufficient to divide and transmit by several hands, in different directions, to escape detection. A Churndar or Burkundoz is generally entertained for the care of the property, but he must have the eyes of Argus to detect plunder all night, and if he had, it would avail little; moreover he has often more than one boat under his charge—he is rather a convenience to them, since in case of the property being missed, it has been in his charge not in theirs.

In transit to and from the Custom House small packages are very frequently carried off, and sometimes even large boxes, by the coolies employed. The depredations committed by this class has been long felt as an intolerable nuisance; the amount of property stolen in this way is very great, and the complaints on the subject are not confined to the Ghauts, but are made from every part of the Town. Identification is almost impossible, and the property stolen never recovered. Hackeries also are occasionally used in abstracting property in transit. It was I think in February last that 6 boxes of Indigo were in this manner carried off and distributed in the northern part of the Town in the course of a few hours, the boxes broken up and thrown into the Tanks for concealment; information was lodged with me about eleven o'clock of the following morning, and I succeeded by great exertion in recovering about two-thirds, but all trace of the Hackerie or driver was lost. I could obtain no description of either, and had the plunder consisted of chintzes, or piece goods, or any other article difficult of identification, the recovery of any part would have been hopeless.

It is of great importance not only to the Mercantile Community but to Government itself, that this system of pillage be put down; and I shall proceed to shew that it is perfectly practicable to do so without incurring any great expense, or the necessity of any innovation on the present system of Police.

I am of opinion in the first place, that a Registry should be made of all descriptions of boats plying on the river Hoogly, within the jurisdiction of Calcutta, and the owners be compelled, under the usual penalties, to have their names and residences painted in large letters on the stern; a fee to be levied on registry, and fresh entry to be made on change of owners. On conviction of theft, the boat should be liable to seizure and sale, and the crew to fine and imprisonment with or without labour, according to the nature of the offence. All the Provisions however of 2nd Geo. III. Cap. 28, are applicable to the Hoogly River Craft, and the adoption of them would at once tend greatly to the suppression of the pillage which now exists.

The Registry of the Coolies and Hackeries also is a very necessary measure, and equally with the registry of Bhurs would tend to check much crime; for when men know that they are liable to be identified and detected, they will avoid the commission of crime. The Regulation fee might be made very slight or might be dispensed with, but any Coolie plying for work without his number and badg, by which he may be distinguished, should be liable to fine or imprisonment at the discretion of the Magistrate, and the same should be extended to any owner of a Hackerie and Karanchee not having the name or number in some conspicuous part.

It has been alledged that the operation of such regulations, as new to India, would be felt as an oppression; but in what way could it so operate, unless it be oppression to deprive the thief of his plunder, or what is the same thing, make the attainment of that plunder a matter of difficulty, by making detection comparatively easy—take the parallel case of the Ticka Palankeens; in addition to being obliged to wear a distinguishing number, the very rate of their gain has been defined, and if there were any approach to oppression in this case, it were the interfering with the rate of remuneration a man may demand for his labour; yet we here of no complaints on this head—the bearers are perfectly contented, the complaints against them very unfrequent, and the system is found to answer perfectly.

The next thing to be considered is the amount of Police establishment adequate to the duties to be performed.

The present Police force connected with the River is as follows,—

Four Boundary Burkandoz Thannahs, consisting of 1 Jemadar, 4 Naibs, and 54 Burkandozes, on a line extending from Hautkhollah on the north, to Cooley Bazar on the south, or a line of bank of about 3 miles in extent. Since the reduction of the Permit Thannahs, consequent on the abolition of the Town Duties, the duty has been very heavy on the above force, from the increased facilities in smuggling salt.

There are also 9 Chowkee Boats, having each 1 Manjee, 2 Chaprasees, and 8 Boatmen, or a total of 99 men.

The pay of the whole of the men should be increased, to insure our getting such as may be depended upon to enter service; and I have calculated this increase in the estimate I have made of the expense attending my proposed plan. On the present rate—I allude particularly to the Chowkee Boats—it is difficult to get any to enter, and those whom we do succeed in getting are of the very lowest class of watermen, whom necessity, or the hope of making money by connivance at thefts, induces to take service.

It will be readily seen how totally inadequate the above force is for the duties of River Police. I would recommend the following alterations and additions,—

1st. The appointment of two European River Constables to be stationed on the River, with a monthly salary of 200 Rupees each, finding their own boats. Their particular duty to be to patrol the River at uncertain times—visiting the different Shipping to see that no suspicious Craft lurk about them—to take note of the Lighters employed by the different Ships, so that on property being missed the Police may have the necessary clue to the depredators—to see the Lighters on leaving the Ships proceed at once to the Custom House Ghaut, instead of crossing the River under pretence of strength of tide—to examine all suspected boats, or apprehend those against whom complaint or information has been lodged—and generally to look after the River Craft.

2nd. The Constables to be assisted in their duties by the Chowkee Boats, which I would recommend to be increased to 14 in number, and the pay of the Manjee and Boatmen respectively raised from 4-8 and 3-8 to 6 and 5. The present Boat Chaprasees I would do away with entirely, and have a regular relief from the Boundary Thannahs to stay on board each boat.

3rd. The Boundary Thannah to be increased from four to seven, having a centre or Sudder Thannah of 1 Jemadar, 2 Naibs, and 24 men, stationed at Clive Street Ghaut, with six subordinate Thannahs, consisting of 1 Naib and 14 men each, to be stationed at intervals along the River—to take care of the Ghauts, and keep watch on the Coolies and Hackeries employed along the whole line—and to assist the boats, when necessary, in the apprehension of offenders.

4th. The Superintendent of the Calcutta Police, under the general controul of the Chief Magistrate, as at present, to be charged with the additional supervision of the increased establishment, but be vested with sufficient authority to deal with the River offences, and to act generally as contemplated by the Chamber of Commerce.

It is the opinion of some I know, that the Judicial and Executive powers should be entirely separate, and it is argued that the vesting the Superintendent of Police with such power would be at variance with the principles of justice, because he would be necessarily interested in the conviction and punishment of offenders, seeing that he had been instrumental in tracing and apprehending them. That this argument might hold good with reference to the subordinates of Police, might be true enough, for they are concerned in frequent personal scuffle with offenders—they become heated by the effort of apprehension, or the trouble a more cunning delinquent has caused them in searching him out—and their tone of mind and habits are not such as to guard them against the influence of such circumstances; but the Superintendent of Police cannot very easily be himself concerned personally in the apprehension of delinquents, and there surely must be a great difference in trust-worthiness and a sense of right (so to speak) between an officer holding that situation and his subordinates, arising from the superiority of habit and education of the one over the other. I cannot conceive how personal feelings, such as anxiety to gain credit by a man's conviction, can exist in him against any particular offender; it must be a matter of indifference to him whether A B or C suffer as A B or C; it is the offence committed against the Community, the welfare of which is entrusted to his guardianship, which must interest him, as it would any Magistrate who conscientiously performed his duty. If the Superintendent can feel that by his own vigour and activity he has succeeded in repressing crimes, he will be satisfied that his duty has been fulfilled. The actual punishment of a criminal can be no gratification to him. That the vesting the Superintendent with these powers would be attended with beneficial result I have long felt convinced, but I would not be considered presuming in forcing that conviction on your Lordship's attention; and now proceed to submit an estimate of the expense attending my proposed plan.

The present expense of the subordinate Establishment connected with the River Police, is as follows,

Contingencies,	..	...	....	....	9	8	0
1 Jemadar,	..	...	....	....	20	0	0
4 Naibs at 6,	..	...	....	...	24	0	0
54 Burkundozes at 5,		....	....	....	270	0	0
18 Boat Chaprasees at 4,		....	....	....	72	0	0
9 Manjees at 1-8,	..	....	....	....	40	8	0
72 Boatmen at 3-8,		....	....	....	252	0	0
9 Boats at 6,	..	....	....	....	54	0	0
4 Thannahs,	..	....	....	....	22	0	0
4 Sirkars at 8,	..	....	....	....	32	0	0
					<hr/>		
					806	0	0

Proposed Establishment.

2	European Constables at 200,	..	..	..	400	0	0
1	Jemadar,	..	..	..	20	0	0
8	Naibs at 7,	..	..	..	56	0	0
108	Burkundozes at 6,	..	..	..	81	0	0
112	Boatmen at 5,	..	..	..	560	0	0
14	Boats at 6,	..	..	..	84	0	0
5	Thannahs at 12,	..	..	..	60	0	0
	Contingences, Oil, &c.	..	..	..	14	0	0
	Registering Sirkar,	....	..	..	30	0	0
					<hr/>	1,956	0 0

Shewing an excess in the proposed Establishment of 1,150 0 0

(Signed) F. W. BIRCH.

Superintendent Calcutta Police.

Z.

to RUSSOMOY DUTT, ESQ.

Member and Secretary First Sub-Committee of Municipal Inquiry.

SIR,

I have the pleasure to inclose the Papers you have called for, regarding the Police Hospital, in your letter dated 31st ultimo. and beg to say, that any further inquiry your Committee may wish to make regarding this Institution, I shall be happy to attend to it. I must request the Committee will be so good as bear in mind, that more than two-thirds of the patients admitted into the Police Hospital, are picked up off the Streets by the Police authorities, and brought to us in a dying state, or in the very last stages of disease and starvation, when no earthly assistance can be of any avail.

I am, Sir,

Your obedient Servant.

R. H BAIN,

Police Surgeon.

CALCUTTA.

February 13th. 1837

Return shewing the Number of Admissions, Discharges, and Deaths, as well as the sum total Dieted and under Medical treatment in the Police Hospital, from 1st January, to 31st December, 1836.

Months.	Total Number of Patients treated in the Police Hospital during each month.	Admissions.				Discharges.				Deaths.			
		Europeans.	Mahomedans.	Hindoos.	Total.	Europeans.	Mahomedans.	Hindoos.	Total.	Europeans.	Mahomedans.	Hindoos.	Total.
January, 1836	3,135	2	37	57	96	2	24	42	68	0	20	31	51
February, do.	2,752	3	34	66	103	3	19	28	50	2	13	30	45
March, .. do.	2,845	10	50	54	114	2	35	35	72	3	16	28	47
April, .. do.	1,600	14	40	67	121	13	31	37	81	1	19	26	46
May, .. do.	2,705	17	52	49	118	6	33	31	70	3	21	25	49
June, .. do.	2,188	14	39	44	97	11	34	39	84	2	15	22	39
July, .. do.	1,299	10	38	42	90	9	28	32	69	1	11	21	33
August, do.	1,446	12	39	53	104	5	22	26	53	1	17	14	32
September, do.	1,719	11	43	50	104	11	21	27	59	2	22	22	46
October, do.	2,142	13	43	69	125	11	16	31	58	1	15	23	39
November, do.	2,390	17	14	60	121	14	34	37	85	1	25	22	48
December, do.	2,404	11	38	71	120	7	27	29	63	6	18	36	60
	26,625	131	497	682	1,313	91	324	394	812	23	212	300	535

Z. 1.

Expenses of the Police Hospital, as charged in the Contingent Bill, for each month in the year 1836, for Dieting, Extra Charges, Country Medicine, Leeches, &c.

	Total Number of Patients treated in the Police Hospital during each month of the year 1836.	Amount Expended		
		Rs.	As.	P.
January, .. 1836.	3,135	183	2	7
February, .. do.	2,752	178	7	4
March, .. do.	2,845	221	14	6
April, .. do.	1,600	229	8	3
May, .. do.	2,705	286	3	3
June, ... do.	2,188	216	10	3
July, .. do.	1,299	161	3	5
August, ... do.	1,446	163	5	4
September, ... do.	1,719	188	9	1
October, .. do.	2,142	228	6	5
November, .. do.	2,390	223	4	2
December, .. do.	2,404	253	14	10
Total.	26,625	2,534	9	5

NOTE. Each European is dieted at four annas per diem. Each Native is dieted at three Puns of Cowries.

Z. 2.

List of the Establishment employed in the Police Hospital, for the year 1836, and the duties of each individual shewn.

No.	Names.	Rank.	Monthly Salary, Co's. Rupees.			Remarks.
			Rs.	As.	P.	
1	M. R. Crawford,.....	Apothecary,.....	80	0	0	{ General Superintendent. This person is obliged to see the medicines properly made up and administered, and the same with respect to diet. He is the running Sircar employed in purchasing different necessaries, and diet, &c. and making out Returns.
1	Collychurn Charterjee,	Sircar,.....	6	0	0	
1	Gunganarain,.....	Native Doctor,.....	12	8	7	{ Employed to make up the medicines for the Patients.
	Nuncoo,.....	Dresser,.....	8	0	0	
2	Pettumbur,.....	Ditto,.....	8	0	0	{ Employed in dressing wounds, sores, and blisters, &c. &c.
1	Tarachund,.....	Hindoo Cook,.....	5	0	0	
	Muddoo,.....	Hindoo Ward Cooley,.....	4	0	0	{ Employed as Cook for the Hindoo Patients.
2	Sonatum,.....	Ditto ditto ditto,.....	4	0	0	
	Uckbur,.....	Mussulman ditto ditto,.....	4	0	0	{ Employed to wait upon those Hindoo Patients who are unable to assist themselves, bringing and carrying away bedding and food, &c.
2	Chawmoo,.....	Ditto ditto ditto,.....	4	0	0	
	Bussruddy,.....	Mussulman Cook,.....	5	0	0	{ Employed to wait upon Mussulman Patients who are unable to assist themselves, bringing and carrying away bedding and food, &c.
2	Goloo,.....	Ditto assistant,.....	4	0	0	
1	Jeetun,.....	European Ward Cooley,.....	4	0	0	{ Employed to cook for the Mussulman Patients.
	Barroo,.....	Bheestee,.....	4	0	0	
	Panchoo,.....	Ditto,.....	4	0	0	{ Employed to cook for the Europeans.
3	Aunnoo,.....	Ditto,.....	4	0	0	
	Bheem,.....	Sweeper,.....	4	0	0	{ Employed to wait upon European Patients, bringing and carrying away bedding and food, &c.
	Pauncho,.....	Ditto,.....	4	0	0	
	Phuttoo,.....	Ditto,.....	4	0	0	{ Employed to bring water for washing, cooking, &c.
	Daunaporce,.....	Ditto,.....	4	0	0	
	Sultan,.....	Ditto,.....	4	0	0	{ Employed for carrying away the filth, washing the beds, &c. for the Hindoo Patients.
6	Mohun,.....	Ditto,.....	4	0	0	
1	Ladha,.....	Myla Mehter,.....	4	0	0	{ Employed for carrying away the filth, washing beds, &c. for the Mussulman Patients.
	Buxoo,.....	Dome,.....	4	0	0	
	Cassarree,.....	Ditto,.....	4	0	0	{ Employed for carrying away the filth, washing beds, &c. for the Women Patients.
	Luchmun,.....	Ditto,.....	4	0	0	
4	Bundhoo,.....	Ditto,.....	4	0	0	{ Employed for carrying away the filth, washing beds, &c. for the European Patients,
1	Golaub Sing,.....	Durwan,.....	4	0	0	
	Johoorum,.....	Nurse,.....	4	0	0	{ Employed to remove all the filth from the Hospital to the River.
2	Beebun,.....	Ditto,.....	4	0	0	
1	R. H. Baine,.....	Surgeon,.....	300	0	0	{ Employed to carry away dead Bodies.
31		Co's. Rs. per mensem....	516	8	7	

Z. 3.

Convicts' Labour.

<i>From 1st May, 1831, to 30th April, 1836.</i>										<i>Five Years.</i>
Amount of Sales of Soorkie and Kankur,	..	..	..	..	..	..	..	..	..	25,449 14 3
Ditto, Ditto, of Soojee, Flour, Bran, &c.,	..	..	..	..	..	..	..	..	..	5,841 11 1
Ditto, Ditto, of Rice and Coodie,	...	..	..	..	..	..	..	..	..	106 13 0
										31,398 6 4
Superintendent's Commission,	..	..	..	..	..	..	..	..	4,313 11 8	
Bricks purchased,	..	..	..	..	..	..	..	..	16,827 11 8	
Wheat ditto,	..	..	..	..	..	..	..	..	4,608 8 9	
Paddy and Rice ditto,	...	..	..	..	..	..	..	..	206 1 3	
Old house bought and pulled down,	..	..	..	..	..	..	..	..	878 12 6	26,834 13 10
Balance,										Sa. Rs. 4,563 8 6
Out of which paid Sirkar's wages at 8,	..	..	..	..	..	..	..	..	480 0 0	
Repairs of Dhenkees, Mills, Sieves, Gunny bags, &c.,	..	..	..	..	..	..	..	..	556 8 9	1,036 8 9
Net Profit,										Sa. Rs. 3,526 15 9

Z. 4.

Convicts' Labour for 1836-37.

Amount Realized by sales of Soorkie, Flour, and Bran,	..	..	..	..	..	..	..	..	..	21,202 3 10
Amount Paid for Bricks and Wheat,	..	..	..	..	..	..	..	..	..	18,226 12 6
										Co's. Rs. 2,975 7 4
Commission of the Keeper at 35 per Cent. on net outturn of labour,					Co's. Rs.	...	1,041 2 3			
Petty Charges,	..	..	..	..	..	..	108 13 9			
Sirkar's Wages,	..	..	..	..	..	..	102 6 4			
										Co's. Rs. 1,723 1 0

Z. 5.

Statement of Prisoners in the House of Correction—shewing the Proceeds and Expense of Convicts' labour for the year 1836.

Number of Prisoners Committed during the year.	Amount of Dicting Bills, &c.			Amount of Purchases.			Amount of Sales.			Amount in favour of Convicts' labour.		
	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.	Rs.	A.	P.
856	4,564	1	3	11,649	12	6	16,404	7	4 $\frac{1}{2}$	4,751	10	10 $\frac{3}{4}$

CALCUTTA: HOUSE OF CORRECTION,

9th February, 1837.

E. B. GLEESON,

Keeper.

Z. 6.

Khoa.

FORM OF DAILY REPORT.

Koilah Ghaut Depôt—Best Khoa.

Months.	Date.	Rollers.			Durumtollah Road.					Mangoe Lane.					Old Court House Street.				
		Co's. Bullocks.	Hired Bullocks.	Horses.	Khoa.	Hackeries.	Coolies.	Rub. Hack.	Bhieeties.	Khoa.	Hackeries.	Coolies.	Rub. Hack.	Bhieeties.	Khoa.	Hackeries.	Coolies.	Rub. Hack.	Bhieeties.
December, 1886.	1			0	66	14	0	0	4	0	0	0	0	0	0	0	0	0	0
	2			0	71	15	0	0	4	0	0	0	0	0	19	4	0	0	0
	3			0	72	15	0	0	4	53	12	0	0	4	0	0	0	0	0
	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6			0	34	7	2	0	3	103	22	0	0	3	0	0	0	0	0
	7			0	19	4	1	0	3	36	8	0	0	3	0	0	0	0	0
	8			0	53	11	1	0	3	31	7	0	0	2	0	0	0	0	0
	9			0	0	0	0	0	3	113	25	0	0	3	0	0	0	0	0
	10			0	0	0	0	0	2	116	31	0	0	1	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12			0	0	0	0	0	0	174	36	0	0	6	0	0	0	0	0
	13			0	0	0	0	0	0	113	31	0	0	6	0	0	0	0	0
	14			0	0	0	0	0	0	195	14	0	0	6	0	0	0	0	0
	15			0	0	0	0	0	0	189	49	4	0	6	0	0	0	0	0
	16			0	0	0	0	0	0	216	52	5	0	6	0	0	0	0	0
	17			0	0	0	0	0	0	241	50	5	0	6	0	0	0	0	0
	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	19			0	0	0	0	0	0	89	19	2	0	6	0	0	0	0	0
	20			0	0	0	0	0	0	80	17	0	0	6	0	0	0	0	0
	21			0	0	0	0	0	0	174	37	0	0	6	0	0	0	0	0
	22			0	0	0	0	0	0	155	33	2	0	6	0	0	0	0	0
	23			0	0	0	0	0	0	123	27	2	0	6	0	0	0	0	0
	24			0	0	0	0	0	0	89	20	0	0	6	0	0	0	0	0
	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	26			0	0	0	0	0	0	175	37	0	0	6	0	0	0	0	0
	27			0	0	0	0	0	0	210	46	0	0	6	0	0	0	0	0
	28			0	0	0	0	0	0	220	47	0	0	6	0	0	0	0	0
	29			0	0	0	0	0	0	154	33	0	0	6	0	0	0	0	0
	30			0	0	0	0	0	0	271	57	0	0	6	0	0	0	0	0
	31			0	0	0	0	0	0	103	22	0	0	6	0	0	0	0	0
Roller.		54	27																
Total. Pairs of Bullocks.		189	135 Horses.	0	315	66	4	0	26	3,518	750	20	0	127	19	4	0	0	0

True form.

W. ABERCROMBIE, *Superintendent roads.*

Z. 7.

Khoa.

FORM OF DAILY REPORT

Koilah Ghaut Depôt—Old Khoa.

Month.	Date.	Khungraputty Street.					Colootollah Street.					Pubberry Gully.					Neemoo Khansomah's Lane.				
		Khoa.	Hackeries.	Coolies.	Rubbish Hackeries.	Bhistees.	Khoa.	Hackeries.	Coolies.	Rubbish Hackeries.	Bhistees.	Khoa.	Hackeries.	Coolies.	Rubbish Hackeries.	Bhistees.	Khoa.	Hackeries.	Coolies.	Rubbish Hackeries.	Bhistees.
December. 1836.	1	55	12				9	2									Rs.				
	2	54	11														18	4			
	3	48	11														32	7			
	4																				
	5																96	20			
	6																				
	7																				
	8																				
	9																				
	10																21	5			
	11																				
	12																				
	13																				
	14																				
	15																				
	16																				
	17																				
	18																				
	19																				
	20																				
	21																				
	22																				
	23																				
	24																				
	25																				
	26																				
	27																				
	28																				
	29																				
	30																				
	31																				
		157	34				9	2				65	8				170	36			

Z. 13.

Return of the Muster of the four Divisions for 1st January, 1837.

Divisions.	Overseers,	Sirdar,	Sirkars,	Peons,	Mehters,	Sirdar Mehter,	Sirdar Doome,	Horse Box Carts,	Co's. Bullocks for Do	Small Carts,	Horses for Roller,	Co's. Bullocks for Do.	Hired Do. for Do.	Hired Do. for Box Carts	Hackeries,	Loading Coolies,	Drain Coolies,	Coolies for Roller,	Boys	Bhistees,	Mehters,	Doomea,	Dogs' heads,
Upper North,	1	1	1	6	21	1	0	0	0	6	0	0	0	19	22	42	100	0	17	0	12	2	5
Lower North,	1	1	1	4	20	1	1	1	0	20	0	0	0	19	0	19	109	0	18	0	15	4	5
Upper South,	1	1	1	6	25	1	1	2	2	0	0	0	0	26	26	42	108	0	22	12	12	4	5
Lower South,	1	1	1	6	23	1	1	2	0	0	0	0	0	21	38	42	106	0	25	12	12	4	5
Total	4	4	4	22	89	4	3	5	2	26	0	0	0	85	86	145	423	0	82	24	51	14	18

I do hereby certify the above is a correct Return of the Establishment as mustered by me, deducting such as were reported absent by the Overseer, Peons, and Sircars.

(Signed) H. G. STATHAM,
Overseer.

This is a Daily Report of the Four Divisions of the Town sent in by Mr. Statham as Muster Master.

W. ABERCROMBIE, 2d Lieut.

Superintendent of Roads and Conservancy.

Z. 14.

Monthly Muster Roll of the number of Box Carts, Hackeries, Mates, Boys, and Mehters, Doomes, &c. employed in the Upper South Division, for the month of August, 1836.

August, 1836.	Sirdar.	Sircar.	Peons.	Mates.	Sirdar Mehter.	Sirdar Doomes.	Horse's Box Carts.	Co's. Bul. for Box Carts.	Horse's Roller.	Co's Bullocks for Roller.	Hired Bullocks for Roller.	Hired Bullocks for Box Carts.	Hackeries.	Loading Coolies.	Drain Coolies.	Boys.	Bhictes.	Mehters.	Domes.	Dogs's heads.	Bullocks died.	Horses died.
1	1	1	6	24	1	0	4	3	8	5	17	20	24	42	119	23	12	12	4	4	0	0
2	1	1	6	24	1	0	4	3	8	5	17	19	23	42	114	24	12	12	4	4	0	0
3	1	1	6	21	1	1	4	3	8	5	17	18	20	42	115	15	12	12	4	4	0	0
4	1	1	6	24	1	1	4	3	8	5	17	19	23	42	119	24	12	12	4	4	0	0
5	1	1	6	23	1	0	4	3	8	5	17	19	24	42	113	17	12	12	4	4	0	0
6	1	1	6	24	1	1	4	3	8	0	0	20	27	42	117	15	12	12	4	4	0	0
7	1	1	6	24	1	1	4	3	8	5	17	19	22	42	115	24	12	12	4	4	0	0
8	1	1	6	24	1	1	4	3	8	5	17	19	22	42	119	29	12	12	4	4	0	0
9	1	1	6	24	1	1	4	3	8	5	17	19	24	42	119	22	12	12	4	4	0	0
10	1	1	6	23	1	1	4	3	8	5	12	18	20	42	119	30	12	12	4	4	0	0
11	1	1	6	24	1	1	4	3	8	5	17	18	21	42	119	28	12	12	4	4	0	0
12	1	1	6	24	1	1	4	3	8	5	17	18	22	42	110	15	12	12	4	4	0	0
13	1	1	6	23	1	1	4	3	8	5	17	18	22	42	119	28	12	12	4	4	0	0
14	1	1	6	24	1	0	4	3	8	0	0	23	22	42	119	24	12	12	4	4	0	0
15	1	1	6	24	1	1	4	3	8	5	22	20	24	42	118	24	12	12	4	4	0	0
16	1	1	6	24	1	0	4	3	8	5	17	20	25	42	119	26	12	12	4	4	0	0
17	1	1	6	24	1	1	4	3	8	5	17	21	22	42	118	28	12	11	4	4	0	0
18	1	1	6	24	1	1	4	3	8	5	12	21	26	42	119	29	12	12	4	4	0	0
19	1	1	6	24	1	1	4	3	8	5	17	20	26	42	116	21	12	12	4	4	0	0
20	1	1	6	24	1	1	4	3	8	5	17	20	25	42	116	29	12	12	4	4	0	0
21	1	1	6	24	1	1	4	3	8	0	0	21	18	42	84	13	12	12	4	4	0	0
22	1	1	6	24	1	1	4	3	8	5	10	20	25	42	119	25	12	12	4	4	0	0
23	1	1	6	24	1	0	4	3	8	5	17	22	21	42	106	27	11	11	4	4	0	0
24	1	1	6	24	1	1	4	3	8	5	17	19	25	42	117	29	12	12	4	4	0	0
25	1	1	6	23	1	1	4	3	8	5	17	21	12	42	81	1	12	12	4	4	0	0
26	1	1	6	23	1	0	4	3	8	5	12	22	5	35	82	2	12	12	4	4	0	0
27	1	1	6	24	1	1	4	3	8	4	13	23	29	42	119	30	12	12	4	4	0	0
28	1	1	6	23	1	1	4	3	8	0	0	22	29	42	120	28	12	12	4	4	0	0
29	1	1	6	24	1	0	4	3	8	4	18	23	22	42	118	25	12	12	4	4	0	0
30	1	1	6	24	1	0	4	3	8	4	23	23	22	42	119	23	12	12	4	4	0	0
31	1	1	6	24	1	1	4	3	8	5	22	19	22	42	114	22	12	11	4	4	0	0
31														1,295	3,521	700	371	368	122	146	0	1

CALCUTTA,
1st September, 1836.

(Signed) J. GREEN.

Z. 15.

A Monthly Roll of the number of the Honourable Company's Carts and hired Hackeries, Coolies, Boys, Mehters, Doomes, Peons, &c. employed in the Lower South Division, in February, supplied by Mr. DICKSON.

	Day of the month.	Box Carts.	Hackeries.	Sirdar Cooley.	Coolies.	Drain Coolies.	Boys.	Sirdar Mehter.	Coolies.	Sirdar Doome.	Coolies.	Sirdar.	Peons.	Bhisteca.	Dogs' heads.
Monday, ..	1	14	38	1	42	103	13	1	12	1	4	1	6	12	4
Tuesday, ..	2	15	43	1	42	106	30	1	12	1	4	1	6	12	4
Wednesday, ..	3	14	44	1	42	111	25	1	12	1	4	1	6	12	4
Thursday, ..	4	16	42	1	42	112	24	1	11	1	4	1	6	12	4
Friday, ..	5	14	45	1	42	112	19	1	11	1	4	1	6	12	4
Saturday, ..	6	14	45	1	42	109	22	1	12	1	4	1	6	10	4
Sunday, ..	7	16	42	1	42	114	28	1	12	1	4	1	6	12	4
Monday, ..	8	14	38	1	42	105	30	1	11	1	4	1	6	12	4
Tuesday, ..	9	15	45	1	42	121	29	1	12	1	4	1	6	12	4
Wednesday, ..	10	16	41	1	42	118	30	1	12	1	4	1	6	12	4
Thursday, ..	11	16	43	1	42	115	23	1	12	1	4	1	6	12	4
Friday, ..	12	16	42	1	42	121	19	1	11	1	4	1	6	12	4
Saturday, ..	13	15	34	1	42	70	15	1	10	1	4	1	6	12	4
Sunday, ..	14	16	43	1	42	123	30	1	12	1	4	1	6	11	4
Monday, ..	15	15	38	1	42	112	24	1	12	1	4	1	6	12	4
Tuesday, ..	16	12	42	1	42	114	23	1	12	1	4	1	6	12	4
Wednesday, ..	17	15	38	1	42	112	20	1	12	1	4	1	6	12	4
Thursday, ..	18	15	27	1	42	66	15	0	9	1	3	1	6	9	4
Friday, ..	19	15	44	1	42	124	29	1	12	1	4	1	6	12	4
Saturday, ..	20	17	42	1	42	122	29	1	12	1	4	1	6	12	4
Sunday, ..	21	20	35	1	42	120	27	1	12	1	4	1	6	12	4
Monday, ..	22	19	29	1	42	108	28	1	12	1	4	1	5	12	4
Tuesday, ..	23	20	36	1	42	121	25	1	12	1	4	1	5	12	4
Wednesday, ..	24	20	36	1	42	117	29	1	12	1	4	1	6	12	4
Thursday, ..	25	20	35	1	42	116	29	1	12	1	4	1	6	12	4
Friday, ..	26	19	36	1	42	117	26	1	12	1	4	1	6	12	4
Saturday, ..	27	20	35	1	42	119	22	1	12	1	4	1	6	12	4
Sunday, ..	28	20	35	1	42	115	25	1	12	1	4	1	6	12	4
Monday, ..	29	19	30	1	42	109	23	1	12	1	4	1	6	12	4
		477	1126	29	1218	3234	711	28	339	29	116	29	172	342	116

(Signed) E. CAMPBELL,
Overseer.

(True Copy,)

CALCUTTA,
2d March, 1836.

W. ABERCROMBIE.

Z. 16.

A Monthly Muster Roll of the number of the Honourable Company's Carts, &c. also hired Carts, Hackeries, Drain Coolies, Boys, Mehters, Doomes, &c. employed in the Lower North Division in February, 1836, supplied by Mr. DICKSON.

Date of the month from 1st to 29th Feb. 1836.	Honourable Company's Horses and Bullock Carts.	Honourable Company's little Carts and single Bullocks.	Hired Carts.	Hackeries.	Loading Coolies.	Drain Coolies.	Drain Boys.	Sirdar Mehter.	Mehters.	Sirdar Doome.	Doomes.	Peons.	Sircar.	Roller Horses.	Dogs killed.	Doomie Carts.	Horses died.	Bullocks died.
1	6	1	20	26	42	155	19	1	15	1	4	6	1	13	4	0	0	0
2	6	1	20	24	42	164	14	1	13	1	4	6	1	13	4	0	0	0
3	6	1	20	24	42	165	20	1	15	1	4	6	1	13	4	0	0	0
4	3	1	20	22	42	158	0	1	15	1	4	6	1	13	4	0	0	0
5	7	1	18	21	42	159	23	1	15	1	4	6	1	13	4	0	0	0
6	6	1	20	23	42	149	11	1	15	1	4	6	1	13	4	0	0	0
7	6	1	20	26	42	162	15	1	14	1	0	6	1	0	0	0	0	0
8	7	1	19	23	42	161	20	1	15	1	4	6	1	13	4	0	0	0
9	7	1	20	22	42	159	23	1	11	1	4	6	1	13	4	0	0	0
10	7	1	20	23	42	162	20	1	15	1	4	6	1	13	4	0	0	0
11	6	1	20	21	42	158	16	1	14	0	0	3	1	13	3	0	0	0
12	4	0	20	19	42	161	21	1	15	0	0	4	1	13	3	0	0	0
13	5	0	17	15	37	132	2	1	10	0	0	6	1	13	3	0	0	0
14	5	4	22	22	42	165	33	1	15	1	4	4	1	0	4	0	0	0
15	5	4	23	23	42	159	27	1	14	1	4	5	1	13	4	0	0	0
16	5	4	24	23	42	162	21	1	15	1	4	6	1	13	4	0	0	0
17	5	4	23	20	42	161	15	1	15	1	4	6	1	13	4	0	0	0
18	3	4	22	3	28	132	19	1	12	1	4	6	1	13	3	0	0	0
19	5	4	21	22	42	157	25	1	15	1	4	6	1	13	4	0	0	0
20	5	4	24	21	42	159	29	1	15	1	4	2	1	13	4	0	0	0
21	5	4	23	21	42	161	18	1	15	1	4	3	1	0	4	0	0	0
22	4	4	23	21	42	160	25	1	14	1	4	6	1	13	4	0	0	0
23	5	4	24	21	42	164	27	1	15	1	4	5	1	13	4	0	0	0
24	4	4	24	22	42	164	27	1	15	1	4	6	1	13	4	0	0	0
25	5	4	23	21	42	160	27	1	14	1	4	6	1	13	4	0	0	0
26	5	4	23	22	42	164	22	1	13	1	4	5	1	13	4	0	0	0
27	5	4	22	19	42	159	24	1	15	0	4	6	1	13	4	0	0	0
28	5	4	23	22	42	162	22	1	15	0	4	6	1	0	4	0	0	0
29	5	4	23	17	42	155	24	1	15	0	4	6	1	13	4	0	0	0

(Signed) R. M. CULLOCH.

(True Copy.)

CALCUTTA.

1st March, 1836.

W. ABERCROMBIE.

Z. 17.

UPPER NORTH DIVISION.

*Return of the Muster of Box Carts, Hackeries, Coolies, Boys, &c. for the month of
January, 1837.*

Date.	Sirdar.	Sirdar.	Peons.	Mates.	Sirdar Mehters.	Sirdar Doomes.	Horse Box Carts.	Small Carts.	Hired Bullocks for Roller.	Hired Bullocks for Box Carts.	Hackeries.	Loading Coolies.	Drain Coolies.	Coolies for Roller.	Boys.	Mehters.	Doomes.	Dog's heads.
1	1	1	6	21	1	0	0	6	0	19	22	42	100	0	17	12	2	3
2	1	1	5	22	1	1	0	6	4	20	19	39	137	1	24	12	4	5
3	1	1	6	21	1	1	0	6	4	19	19	42	113	1	23	12	4	4
4	1	1	6	21	1	1	0	6	4	18	24	42	129	1	24	12	4	5
5	1	1	6	21	1	1	0	6	4	19	21	42	111	1	16	12	4	5
6	1	1	6	22	1	1	0	6	4	19	20	40	124	1	22	12	4	3
7	1	1	6	20	1	1	0	6	4	19	22	42	109	1	21	12	3	5
8	1	1	6	20	1	1	3	6	0	20	23	42	146	0	23	11	4	4
9	1	1	6	16	1	1	3	6	4	18	11	35	148	1	7	12	4	6
10	1	1	6	20	1	0	3	6	0	19	21	42	151	0	26	12	3	4
11	1	1	6	21	1	1	3	6	4	17	20	42	155	1	20	12	4	5
12	1	1	6	21	1	1	3	6	4	19	24	42	149	1	3	12	4	5
13	1	1	6	21	1	1	3	6	4	18	24	42	153	1	12	11	4	3
14	1	1	6	23	1	1	3	6	4	20	15	41	146	1	20	12	4	5
15	1	1	6	22	1	1	3	5	0	19	21	42	148	0	26	11	4	6
16	1	1	6	22	1	1	3	5	4	19	20	42	146	1	24	12	4	4
17	1	1	6	23	1	1	2	5	4	16	18	42	145	1	27	12	3	4
18	1	1	6	22	1	1	2	5	4	18	24	42	146	1	27	12	4	5
19	1	1	6	22	1	1	2	5	4	18	21	41	151	1	27	12	4	4
20	1	1	6	22	1	1	2	6	4	19	22	42	146	1	22	12	4	5
21	1	1	6	22	1	1	2	6	4	19	26	42	151	1	27	12	4	3
22	1	1	6	20	1	0	2	6	0	19	25	42	148	0	31	12	4	2
23	1	1	6	22	1	1	2	6	4	18	22	42	139	1	31	12	4	5
24	1	1	6	20	1	0	2	6	4	20	20	42	143	1	37	12	4	4
25	1	1	6	20	1	0	2	6	4	17	15	36	125	1	30	12	4	4
26	1	1	6	21	1	1	2	6	4	20	17	38	147	1	23	12	4	4
27	1	1	6	21	1	1	2	6	4	19	18	39	135	1	28	12	3	3
28	1	1	6	21	1	0	2	6	4	20	19	11	138	1	18	12	2	2
29	1	1	5	21	1	0	2	6	0	20	19	42	137	0	22	12	3	4
30	1	1	6	21	1	0	2	6	4	19	21	42	134	1	27	12	4	5
31	1	1	5	20	1	1	2	6	4	20	18	40	140	1	28	12	4	4
31	31	183	652	31	23	57	181	100	584	638	1,272	4,290	25	713	369	115	130	

Shaik Bauker, Peon, one day sick.

Urshed Ally, Ditto, one do. do.

Mohamed Ruffie, Ditto, one do. do.

The Publick Tanks are in the same state as reported last month.

(Signed)

J. TWEEDALE,

Overseer

CALCUTTA,

4th February, 1837.

W. ABERCROMBIE, 2d. Lieut.
Superintendent of Roads and Conservancy.

N. B.—The Overseers of the Four Divisions of the Town, send in
each a Monthly Report similar to this.

Z. 18.

Strand Division Daily Report for January, 1837.

	Date.	Roller Bullocks.	Box Carts.	Coolies.	Doomes.	Peons.	Sirdar.	Bheesty.	Roller Bhieestees.	
January.	1	10	10	42	2	5	1	1	2	<p>No daily Report of this is received.</p> <p>W. ABERCROMBIE, 2d. Lieut.</p> <p><i>Superintendent of Roads and Conservancy.</i></p>
	2	10	10	42	2	5	1	1	2	
	3	10	10	42	2	5	1	1	2	
	4	10	10	42	2	5	1	1	2	
	5	10	10	42	2	5	1	1	2	
	6	10	10	42	2	5	1	1	2	
	7	20	10	42	2	5	1	1	2	
	8	10	10	42	2	5	1	1	2	
	9	0	9	42	2	5	1	1	0	
	10	10	10	42	2	5	1	1	2	
	11	10	10	42	2	5	1	1	2	
	12	10	10	42	2	5	1	1	2	
	13	10	10	42	2	5	1	1	2	
	14	10	10	42	2	5	1	1	2	
	15	10	10	42	2	5	1	1	2	
	16	10	10	39	2	5	1	1	2	
	17	10	10	14	2	5	1	1	2	
	18	10	9	42	2	5	1	1	2	
	19	0	10	42	2	5	1	1	0	
	20	0	10	42	2	5	1	1	0	
	21	0	10	42	2	5	1	1	0	
	22	0	10	42	2	5	1	1	0	
	23	10	10	42	2	5	1	1	2	
	24	10	10	42	2	5	1	1	2	
	25	10	10	42	2	5	1	1	2	
	26	10	10	42	2	5	1	1	0	
	27	0	10	42	2	5	1	1	0	
	28	0	10	42	2	5	1	1	0	
	29	0	10	42	2	5	1	1	0	
	30	0	10	42	2	5	1	1	0	
	31	10	10	42	2	5	1	1	2	
		230	308	1,300	62	155	31	31	42	

CALCUTTA,

1st. February. 1837.

(Signed)

S. CLARK.

Z. 19.

Return of Works performed on the Esplanade on the 2nd January, 1837.

Where employed.	Pair of Bullocks.	Mollies.	Coolies.	Peons.	Length.	B. ad	Depth.	Box Carts.	Mistry.	Sirdar.	Sircar.	Ferrahs of Koah.	Bhiestees.	Remark.
Childrens' Walk and all Division.	3	6	30	4	0		0	7	1	1	1	20	2	Establishment repairing Drains south of the Jail. filling up holes in the Coolie Bazar, and Midaun. Carts Do. Do. Mollies repairing Walk.

(Signed) H. G. STATHAM,

Overseer.

No Monthly Report of this is received

W. ABERCROMBIE, 2d. Lieut.

Superintendent of Roads.

Z. 20.

Khoa Depots.*Under the Superintendent of Roads.*

Coilah Ghaut Depôt,	2 Peons.	}			
Mowla Ally Durgah Depôt,	2 Do.				
Manicktolla Depôt,	1 Do.				
Aherytollah Ghaut Depôt,	1 Do.		10 Peons at 5	52	0 7
Baug Bazar Ghaut Depôt,	1 Do.		1 Supervisor,	42	0 0
Strand Division,	2 Do.				
Esplanade,	1 Do.				

Under the Executive Officer.

Coilah Ghaut Depôt,	2 Peons	}	6 Peons at 5	31	5 6
Mowla Ally Durgah Depôt,	1 Do.				
Manicktollah Depôt,	1 Do.		* 8 Mate Coolies and 1 Brick-	41	4 4
Aherytollah Depôt,	1 Do.		layer Mistry for all Depôts,		
Baug Bazar Depôt,	1 Do.				

* In place of 8 Mate Coolies and 1 Bricklayer Mistry Mr. Sevestre has employed 5 Sircars for measuring and receiving Khoa from all Depôts.

Z. 21.

List of Streets lighted by the Conservancy Department.

1st or Upper North Division.	Nimtollah Ghaut,	2	20
	Juggernoth Ghaut,	9	
	Cornwallis Square,	4	
	Ditto Ghauts,	4	
	Hindoo Burning place, Nimtollah,	1	
2d or Lower North Division	Cossinoh's Ghaut,	19	67
	Old Fort Ghaut,	3	
	College Square,	4	
	Ditto Ghauts,	4	
	Mirzapore Square,	4	
	Ditto Ghauts,	4	
	Smith's Ditto,	2	
	Old Fort Street,	4	
	Writers' Building,	4	
	Court House Lane,	1	
	New China Bazar,	4	
	Ditto Street,	1	
	Swallow Lane,	1	
	Sooke's Lane,	2	
	Dr. Nosky's shop,	1	
	Rada Bazar Street,	2	
	D'Souza's Lane,	2	
	Chattawallah Lane,	3	
	Loll Bazar,	2	
3d or Upper South Division	Coilah Ghaut,	3	87
	Ditto North side Chandpaul Ghaut,	9	
	Tank Square	4	
	Ditto Ghauts,	4	
	Tank Square, North side,	2	
	Wellington Square,	4	
	Ditto Ghauts,	4	
	Ditto Bank,	2	
	Ditto Gate,	2	
	Loll Bazar, South-East and West corners,	2	
	Grant's Lane,	2	
	Ditto opposite,	2	
	Ditto inside,	3	
	Weston's Lane,	2	
	Cooper's Ditto,	1	
	Zig Zag Ditto,	2	
	Mangoe Ditto,	2	
	Ditto opposite,	2	
	Ditto inside,	4	
	Ditto West corners,	2	
	Emaumbaugh Lane,	2	
	Gibson's Lane, East corners,	2	
	Ditto South Ditto,	2	
	Ditto inside,	2	
	Sooterkin's Lane,	2	
	Rannce Moody Lane,	4	
	Ditto inside,	2	
	Waterloo Street,	4	
	Ditto Lane,	3	
	Meredeth's Lane,	2	
	Nunkoo Jamadars, Lane,	2	
	Ditto opposite,	2	
	Crooked Lane West corners,	2	
	Ditto North Ditto,	1	
	Ditto inside,	5	
	Jebb's Lane,	2	
	Cossitollah,	2	
Carried Over,		99	

Sa. Rs..... 6,266 0 1

Z. 22.

List of Tank Establishment.

			Rs.	A.	P.		Before the Reduction in 1831 it was,
1	Naib,	..	67	0	0	5 Tanks on Chowringhee Plain now	67 Rs.
12	Burkandazes,	...				embodied with Esplanade Guard,	
1	Sirdar,	.. 6 0 0					
4	Mollies,	.. 20 0 0					
3	Do.	.. 1 2 0	49	8	0	Tank Square.	96 Rs.
2	Chowkeydars,	.. 10 0 0					
	Oil and Implements,	.. 1 8 0					
1	Sirdar,	..	27	0	0	Wellington Square.	64 Rs.
3	Mollies,	..					
2	Chowkeydars,	..					
1	Sirdar,	..	17	0	0	Wellesley Square.	25 Rs.
1	Molloy,	..					
2	Chowkeydars,	..					
1	Sirdar,	..	17	0	0	Cornwallis Square.	21 Rs.
1	Molloy,	..					
2	Chowkeydars,	..					
1	Sirdar,	..	17	0	0	College Square.....	25 Rs.
1	Molloy,	..					
2	Chowkeydars,	..					
1	Sirdar,	..	21	0	0	5 Tanks in Hastings' Place.	21 Rs.
2	Mollies,	..					
2	Chowkeydars,	..					
1	Molloy,	..	9	0	0	Mirzapore Tank...	9 Rs.
1	Chowkeydar,	..					
1	Chowkeydar,	..	4	0	0	Soortie Bagaum Tank.	4 Rs.
1	Molloy,	..	4	0	0	Burying Ground...	4 Rs.
1	Molloy,	..	4	0	0	Middleton Row Tank, (recently abolished).	4 Rs.
51			Rs. 236	8	0		340 Rs.

Report on the Executive Management of the Conservancy in Calcutta.

Having found considerable difficulty in conducting the duties of my Office since my appointment to it, and finding myself in an unpleasant and awkward situation from the footing on which I find myself in the Conservancy Department, I beg leave to submit the following remarks to the consideration of the Chief Magistrate, requesting, if he approve the amendments therein desired, that they may be carried into execution ; and if they be disapproved by him, or objections be raised to them by other Magistrates, that they may be forwarded to the Right Honourable the Governour of Bengal, whose favourable consideration I respectfully solicit ; more especially as I do not believe that I have in them applied for any authority which it was not his Lordship's intention to confer upon me, when he made my services available to the Town of Calcutta.

2nd. At present, with the exception of the buildings going on, and the employment of the Establishment, I have no superintendence of Conservancy—all matters connected with the state of the Roads and Drains are referred by the Inhabitants to the Magistrates, and there are a set of men called Conservancy Sircars employed in the Town quite independent of me in every way, who also make their Reports, with the exception of petty repairs required, to the Magistrates.

3rd. These Reports after examination by a Magistrate, are referred by him to the Overseer or to me for examination or farther report, as he pleases. Frequently they are referred first to the Overseer and then to myself. The Overseers also make a number of Reports direct to the Magistrates, of which I hear nothing, unless they be referred to me for Report : in the designation of Superintendent of Conservancy therefore is at present a misnomer ; I am but a Referee.

4th. The direct communication between the Magistrates and Overseers, also, without any previous reference to me, has a tendency to lessen my authority over them ; and I speak from experience when I say, that I have by no means the same efficient authority over these Overseers that is possessed by an Officer in the Department of Publick Works over his.

5th. Many cases are referred to the Overseers by the Magistrates which I never see, which had they been referred to me, would probably have been reported on in a different manner to which they actually are—this leads to a total abolition of system.

6th. Many cases are referred by the Magistrates to me, which had they come to me in the first instance, I might probably have settled without farther reference, on visiting the spot myself.

7th. Many cases are referred to me by the Magistrates, which bearing their request for an examination and report, frequently after the same by an Overseer, oblige me to proceed myself to the spot : whereas had they been referred to me in the first instance, I in many instances could have settled them in my Office, or referred them to the Magistrates for investigation with as complete a report from thence, as I could prepare after visiting the place. This I should be able to do from the twelve month's experience I have had in visiting places on several hundred cases referred to me by the Magistrates. It is needless to say that the Magistrates themselves, with the exception of the Chief Magistrate who in peculiar cases sometimes views the locality, never examine the site of Conservancy cases themselves. This continual reference I find,

* Rather a petulant expression in relation to Magistrates.

(Sd.) C. K. R.
W. C. B.

if I may use a common Conservancy expression, a complete *nuisance*.* I have stated that I find myself obliged from the nature of the reference to visit almost every place myself, the case connected with which is referred to me, and the consequence is, that I have continually a number of these cases on hand, and am employed morning after morning driving about to different parts of the

Town, marking out entrance bridges to houses, lining out boundary walls, &c. &c. when my time could be much more usefully employed inspecting the repairs of the Roads, the works carrying on by the Executive Officer, the Gowkhanas, and the employment of the Establishment.

8th. To remedy the above—I ask that I may be placed in charge of my own appointment : that is, that I may have the same controul over the Conservancy Establishment that the Superintendent of Police has over the Police of the Town.

9th. In the first place I request that all the Conservancy Establishment may be placed completely under my controul, with the same powers of entertainment and dismissal, reward and punishment, (excepting the Executive Officer who is appointed by Government) that are granted to the Superintendent of Police.

10th. I also request that these Establishments may in all cases report to me, and that they may have no further communication with the Magistrates than is necessary in their giving evidence before them.

11th. I also request that Petitions presented to the Magistrates requiring reference in their opinion, may be referred not to the Overseers or Establishment, but direct to me for report, it being left to my own judgment to determine the necessity of my proceeding to the site of the case myself, or framing my report from that of the Overseers or other

Establishment; it of course being understood that if a Magistrate thinks proper to decide a case himself at once that there is no necessity for his referring it to me.

12th. Lastly, I should wish that the Magistrates may be requested to refrain from granting licenses to deposit building materials in the Streets and enclose portions of the publick Road, until the several petitions on the subject have been referred to me for report. The reason of this is, that many people obtain licenses for long periods, obstruct the Streets while delaying their buildings, and obtain a second license when the Magistrate has forgotten that he had granted the first.

13th. The First Regulation will cause my authority to be respected, whereas at present I have not even the power of removing an Overseer from one Division to another, nor affecting his salary in any way, without a tedious form of complaint and investigation before the Chief Magistrate on a matter which I may have myself already thoroughly examined into.

14th. The Second and Third will, in addition to the above, expedite business by enabling me to dispose of cases in the quickest manner, and leave me leisure to attend to the direct duties of my superintendency.

15th. I do not know whether the last may be considered likely to delay business, but I believe that it will tend to prevent unnecessary obstructions in the Streets.

16th. I trust that the propositions herein contained may not be deemed unreasonable, as they are not intended in any way to supersede the controul exercised by the Chief Magistrate over the Police Establishment in all Departments, but are merely desired to facilitate business and render my superintendency more effectual, by removing the necessity of constant reference to superior authority in minor matters, which cannot be necessary if that confidence can be placed in my discretion which I might naturally expect my situation in the service to obtain for me, although not endued with Magisterial authority.

17th. In conclusion, I beg leave to quote the 53rd paragraph, and 5th section of 57th paragraph of Mr. M'Farlan's Letter to the address of Mr. Mangles, Secretary to Government, dated 12th May, 1835. The former of which shews that the Government granted an Engineer Officer in the Conservancy Department on the understanding that he was to be on the same footing in the Conservancy Department that the Superintendent of Police was in his; and the second shews that the Magistrates were to be relieved from all "Executive functions," or interference with the Executive Establishment in the Conservancy Department; whereas the stress laid on the "talent and energy of the highly qualified" description of Officer called for, compared with the very limited authority conceded to me even in the secondary duty of "training Scavengers," would seem now to imply that while an Engineer had been granted by the Government, the qualities required had not been obtained. I need hardly say that I feel my situation under these circumstances not only unpleasant, but one in which I do not believe it was the intention of Government to place me.

(Signed)

W. ABERCROMBIE, 2nd Lieut.

Supt. Roads, Conservancy, and Publick Works.

Calcutta, 6th April, 1837.

Extract of a Letter dated 12th May, 1835, by Mr. M'Farlan to the address of Mr. Mangles, Secretary to Government.

"53rd. The sum thus saved should go to constitute the Salary, or part of it, of an able Engineer Officer, to be vested with the entire executive Management of the large Conservancy establishment now maintained—this Officer acting as Captain Steel does, under the general controul of the Chief Magistrate."

"57th.—5th. Sec. The desirableness of separating the Judicial from the Executive functions, seems to be admitted on all hands. The chief pursuits of Magistrates are, or ought to be, very different from those connected with drilling Watchmen, or training Scavengers. In the case of Mr. Trower and myself we can only give partial and uncertain attention to the details of the Executive branch of the Publick duty. Mr. Trower gives attendance for only two days in each week, and I, though I attend daily, am liable at all times to be called away to the consideration of some important matter that presses urgently at the time. I think that I am justified in expecting a great improvement to result to the cleanliness of the Town, from the exclusive application of the talent and energy of an highly qualified Officer to this particular branch of duty."

(True Extract)

(Signed)

W. ABERCROMBIE, 2nd Lieut.

Supt. Roads, Conservancy, and Publick Works.

CALCUTTA,
6th April, 1837.

*At a Meeting of the Magistrates, held at the Police Office, on Saturday, the
29th April, 1837,*

Present,—

D. M'FARLAN, Esq.

C. K. ROBISON, Esq.

W. C. BLAQUIERE, Esq.

and

A. ST. L. M'MAHON, Esq.

P. O'HANLON, Esq.

Read Lieutenant Abercrombie's Papers on the subject of the Conservancy Establishment, dated the 6th April, instant. The following Resolutions on the specifick points adverted to in the 8th paragraph are passed and recorded :—

PARA. 8th. "I request that I may be placed in charge of my appointment; that is, that I may have the same controul over the Conservancy Establishment, that the Superintendent of Police has over the Police of the Town."

The Magistrates resolve, that this requisition is at variance with the Law.

"33rd. Geo. 3rd. cap. 52, § 158."

"And, whereas by an Act of the first year of the reign of His late Majesty King George the First entitled an Act for making the Laws for repairing the Highways more effectual, provision was made for authorizing Justices of the Peace in Cities and Market Towns, at their General or Quarter Sessions to appoint Scavengers for cleaning and repairing the Streets of the same, and to raise money by Assessments, for defraying the expenses thereof. And whereas by an Act passed in the seventh year of the reign of His present Majesty, to amend and reduce into one Act the Statutes for the amendment and preservation of the Publick Highways, it was enacted, that the said recited Act of the first year of King George the First should be repealed. And, whereas it is essentially necessary for the health, as well as for the security, comfort, and convenience of the Inhabitants of the Towns and Factories of Calcutta, Madras, and Bombay, in the East Indies, that the Streets therein should be regularly and effectually cleansed, watched, and repaired; be it therefore enacted, that it shall and may be lawful to and for the Justices of the Peace within or for the Presidencies of Fort William, Fort St. George, and Bombay respectively, for the time being, or the major part of them from time to time assembled at their General and Quarter Sessions, to appoint Scavengers for cleansing the Streets of the said Towns or Factories of Calcutta, Madras, and Bombay, respectively, and to nominate and appoint such persons as they shall think fit on that behalf, and also to order the watching and repairing of the Streets therein as they respectively shall judge necessary, &c".

The Chief Magistrate further remarks that it is inconsistent with the letter of the Resolutions of Government of the 12th October, 1830, Para. 21st; but that he nevertheless conceives that the request is just and proper, and that the Law should be altered, as well as the Resolutions of Government.

PARA. 9th. " I request that all the Conservancy Establishments may be placed completely under my controul, with the same powers of entertainment and dismissal, reward and punishment (excepting the Executive Officer who is appointed by Government) that are granted to the Superintendent of Police."

The same Resolution applies to this request.

PARA. 10th. " I also request that these Establishments may in all cases report to me, and that they may have no farther communication with the Magistrates than is necessary in their giving evidence before them."

The same Resolution applies to this request.

PARA. 11th. " I also request that Petitions presented to the Magistrates requiring reference in their opinion, may be referred not to the Overseers or Establishment, but direct to me for report, it being left to my own judgment to determine the necessity of my proceeding to the site of the case myself, or framing my report from that of the Overseers or other Establishment; it of course being understood that if a Magistrate thinks proper to decide a case himself at once, that there is no necessity for his referring it to me."

The same Resolution applies to this request.

PARA. 12th. " Lastly, I should wish that the Magistrates may be requested to refrain from granting Licenses to deposit building materials in the Streets and enclose portions of the Publick road, until the several Petitions on the subject have been referred to me for report: the reason of this is that many people obtain licenses for long periods, obstruct the Streets while delaying their buildings, and obtain a second license when the Magistrate has forgotten that he had granted the first."

The same Resolution applies to this request.

The Chief Magistrate remarks in addition, that the kind of Petitions alluded to, should be better defined. A custom has crept in, by which many Petitions are presented to the Magistrate which need not be so presented. A person building on the edge of a Road or Lane applies to the Magistrate to mark the line for him. It seems clear to the Chief Magistrate that the application might be made at once to the Superintendent and disposed of by him. In the same manner by a slight alteration of the Law, the executive administration of granting licenses to deposit building materials on the Roads might be left entirely in the hands of the Superintendent, infractions of the Law only being brought before the Magistrates for trial.

(Signed) D. M'FARLAN,

Chief Magistrate.

Having inquired of Messrs. Blaquiére, M'Mahon, and Robison if they would sign this Paper, they declined doing so, and stated that they thought it sufficient if the purport of it were communicated to Lieut. Abercrombie.

Mr. O'Hanlon is absent from ill health.

(Signed) H. C. WATTS,

18th May, 1837.

Judicial Department. }
30th May, 1837. }

(True Copies.)

S,

rt. of Bengal.

Z. 24.

A Report on the Conservancy of the Town, by Lieut. W. Abercrombie, submitted to Government through the Chief Magistrate.

To R. D. MANGLES, ESQ.

Secretary to the Government of Bengal.

SIR,

I have the honour to forward a Report by Lieutenant Abercrombie on the Conservancy of the Town. This Report is rather long, and I am unwilling to lengthen it by detailed remarks; I have however taken the liberty to insert in red ink a few short notices in the margin of the Report. These remarks have been seen by Lieutenant Abercrombie.

In general I think the suggestions of Lieutenant Abercrombie entitled to consideration, and accordingly submit them.

I have, &c.

CALCUTTA POLICE OFFICE,
31st May, 1837.

(Signed) D. M'FARLAN,
Chief Magistrate.

To D. M'FARLAN, ESQ.,

Chief Magistrate.

SIR,

I have the honour to request your forwarding the accompanying Letter, No. 1, dated 23d May, 1837. to the address of R. D. Mangles, Esq. for submission to the Governour of Bengal.

I trust that Mr. Mangles' Letter of the 23d instant, received to-day, will not prevent the forwarding of mine, which has been some time drafted, and has been delayed in the copying, although the first part of my Letter applies to the Report which was submitted by you to the consideration of the Magistrates, and on which nothing will be decided by Government until they have received the Report of the Committee of Municipal Inquiry. It is still expedient that it should be sent on, as I cannot remember having had an opportunity of explaining to the Committee the details therein contained, which were required to accompany my Report when sent to Government, although not necessary to be attached to it before it had left the Police Office.

In the latter part of my Letter I have drawn up a Report I was desired to make out by the Right Honourable the Governour, with as little delay as possible, on my being appointed to my present situation.

CALCUTTA,
29th May, 1837

I have, &c.

(Signed) W. ABERCROMBIE, Lieut.
Supt. Roads, Conservancy, and Publick Works.

To R. D. MANGLES, ESQ.

Secretary to the Government of Bengal.

Sir,

Calcutta, 23d May, 1837.

Having since my appointment to the superintendence of Conservancy in Calcutta, found it impossible in the situation in which I stand in the Department to carry on the duties of my Office in what I should consider an efficient manner, I forwarded to the Chief Magistrate, on the 6th ultimo, a Report on the Executive Management of the Conservancy in Calcutta, in which I stated my objections to the present system of management, with the amendments I thought required: these amendments were by Mr. M'Farlan submitted for the consideration of the other Magistrates, and owing to their opposition, rejected. I have reason to believe that the Chief Magistrate, who is more concerned in them than any other, is rather favourably disposed towards them: under these circumstances, I am under the necessity of coming before His Excellency the Governour of Bengal, whose attention to my remarks I respectfully solicit.

2. By the Resolution of Government, dated 12th October, 1830, it appears on the 21st paragraph, that it is expected by the Governour General in Council that the duties of the Conservancy will continue as heretofore to receive the especial attention of the person holding the office of Chief Magistrate, and that he will exercise an active and personal superintendence over the Establishment kept up. The Chief Magistrate's Letter, however, to your address, of 12th May, 1835, in paragraph 53, and section 5 paragraph 57, states the desirableness of separating the Judicial from the Executive functions, and applies for an Officer of Engineers for the sole purpose of performing the latter, under his general controul, and to be vested with this management in the same manner as Captain Steel. The 6th paragraph of the above Resolutions shews that the Superintendent of Police, "a Military Officer, not a Magistrate," had the power of entertainment and dismissal over all his Establishment, European and Native, not appointed by Government. My appointment to the superintendence of Conservancy was owing to the Chief Magistrate's application above mentioned.

3. Under the present system of management, not only does the Superintendent of Conservancy not possess the powers mentioned above, but a considerable portion of the Conservancy Establishment are not under his orders at all. Those I chiefly allude to, are a set of men called the Conservancy Sirkars, of whom there are twenty allowed, each having a Peon. These people are entrusted with the preservation of the publick thoroughfares from encroachment, and all cases of encroachment they choose to report, they report to the Magistrates, under whose controul they are, and to whom they are responsible. Reports of repairs required they of course make to me. This reporting to the Magistrates, when it occurred in Police cases, it would appear from No. 7 of the formerly quoted Resolutions of Government, was considered as liable to entail on them an unnecessary degree of trouble; their relief from which, by the Superintendent of Police, was considered an advantage. Under the Chief Magistrate's recommendation that the required Superintendent of Conservancy be on the same footing as the Superintendent of Police, I refer this remark, by analogy, to the Conservancy Department.

4. In addition to the above Establishment, who are independent of me in every way, the Overseers—the Scavengers who have the direct charge of the cleanliness of the Town in their Divisions, to effect an improvement in which the Chief Magistrate most especially desired the controul of an Engineer Officer—make many reports to the Magistrates, without any reference to me; many of which reports are decided without my being ever made aware of the cause of complaint; some are referred to me by the Magistrates for my opinion, and in nine cases out of ten I view the locality. I do this out of deference to the Magistrates, though I could frequently determine the matter as well at my own desk as on the site of the report; and did I do so, would have time in the morning to inspect the works supposed to be in progress under my superintendence, instead of being fully employed in marking out entrances over Drains to Native Huts, in which the experience of the Overseers might well be made available.

5. Of the Reports that are referred to me, on which I give opinion, I have no means of knowing whether my opinions are acted upon or over-ruled—there is a separate Office in the Police Establishment called the Judicial Conservancy Office, through which I receive the references, and in which Office they are deposited by the Magistrates after being determined upon. In many instances the cases sent me do not bear even the common courtesy of the Magistrate's signatures, but are "true copies" certified by a Native Clerk, or East Indian writer.

6. I have more than once found considerable inconvenience from the orders of a Magistrate to an Overseer clashing with mine, and it is, in fact, impossible that business can be properly carried on when the Executive Department are liable to

Proposed to be abolished,
See Chief Magistrate's
annual Reports of 1832
and 1834.—
(Sd.) D. M'FARLAN,
C. M.

Proposed to be abolished
as above.
(Sd.) D. M'F.

contradictory orders from different persons. I submit, that under the circumstances above detailed, I have not the superintendence of the Conservancy to the extent, that there is reason to believe, it was the intention of Government to confide to me.

7. In my Report to the Chief Magistrate, referred by him to the other Magistrates, I stated the propriety of Licenses to enclose portions of road not being granted without reference to me. In looking over the Bye-Laws of the Town, I find that by the 11th Section of the Bye-Law, registered in the Supreme Court, 25th November, 1780, and cancelled by Government on 8th January, 1761, these Licenses were granted by the Superintendent of Roads, or Surveyor as he was then called. I believe it would prevent unnecessary encroachment were these Licenses again

I think so.
(Sd.) D. M' FARLAN. subjected to the controul of the Superintendent, and granted by him. I have had the superintendence of Roads before receiving charge of those in Calcutta, and certainly before coming here, should have felt surprise at any Magistrate granting a License to encroach temporarily on them, while they were under my charge. I cannot see the necessity for it here; and under the support of the old Bye-Law, would submit, that it was not always considered necessary.

8. I have thus stated what I consider objectionable in the present Executive Management of the Conservancy: the remedies I have already proposed in the Report submitted to the Magistrates, which, as I understand it to be the intention of Mr. M'Farlan to forward it to Government, I need not repeat here—It has been, and the reply has been obtained, (Sd.) D. M' FARLAN, Chief Magistrate's letter of 12th May, 1835.—their effect would be to vest the Superintendent of Conservancy, “with the entire Executive Management of the large Conservancy Establishment now maintained.”

9. These remedies the ordinary Magistrates have objected to on the ground of their illegality, as they are opposed to the letter of the Act of Parliament 33 Geo. 3d Chap. 52, Sec. 158; these objections are the more extraordinary, that they do not appear to have been urged before, when the provisions of that Section were set aside, as far as regarded the watching of the Town, by the Government Resolutions of 12th October, 1830, by which the appointment of Watching Establishment was vested in the Superintendent of Police, a Military Officer, not a Magistrate. I cannot however recognize the validity of these objections, even upon their legality. The Act 26, Geo. 2d appoints the Governour, or President and Council of Fort William the Justices of the Peace for the Settlement; the Governour in Council is therefore perfectly competent to approve of Scavengers appointed by the Superintendent of Conservancy; and it appears to me, that it is not for a Magistrate of Calcutta to say, that the Governour in Council shall not approve of the appointment of Scavengers in the same manner that he does of Constables, &c. included in the Police Establishment—a watch of the Town; that is, that he is not as competent to allow the Superintendent of Conservancy to appoint and dismiss Scavengers, as he is to allow the Superintendent of Police to appoint and dismiss Constables.

10. In addition to this, I am very certain that none of the present Scavengers were appointed in Quarter Sessions. Allowing that some of them were, others have been appointed by the present Chief Magistrate, without reference to the other Magistrates, and continue to hold their situations without the legality of their tenure being questioned. I did not expect the Magistrates, when my Report was submitted to them, to notice this proposition at all, considering it one with which they had no concern—the appointment of Scavengers resting with the Chief Magistrate, by Government Orders, with no more reference to the Act of Parliament than I ask in transferring the power of appointment to me. I merely expected their determination regarding the manner in which they would receive Conservancy Reports, and grant licenses.

11. Respecting the receiving Reports,—I understand the Magistrates look upon me as an Officer unknown to the law; this has not prevented continual references being made to me, at the same time, it shews the expediency of my being placed on a more decided footing, and my duties and responsibility being more distinctly defined than at present.

12. Regarding the Establishment as maintained at present, and the improvements to which it is liable, I forwarded the other day a Report to the Chief Magistrate, which has been submitted to Government: the only Establishment not noticed in that Report, are the Strand and Esplanade Establishments, in the Native part of which no alterations appear necessary. Chief Magistrate's letter to the address of R. D. Mangles, Esq. dated 28th April, 1837, transmitted through the Military Board.

13. The Europeans under my orders consist of an Executive Officer, six Overseers, or Scavengers, and one Lighting and Watering Overseer.

14. The Executive Officer is employed in constructing and repairing Drains and other works in the Town; he also lays down the material on the Roads, which is brought from the Depôts by the Hackery Contractor, and charges the expense of so doing;—all his bills are passed by me, and it is considered part of my duty to see that his work is properly executed, and with good materials. On the Roads, his duty merely consists in laying down the material given him, except in the Strand Division and on the Esplanade; he is not to look to the goodness or badness of it, but is merely to lay it down properly. The Road material is supposed to be received by the Superintendent, and delivered over to the Executive Officer, as there is no other European attached to these Roads; the material is of course actually received and delivered at the several Depôts by the Native Establishment;—herein is an anomaly, which I am surprised should not have struck any of the Conservancy authorities. A separate Superintendent is required to inspect the work performed by the Exe-

cutive Officer in Building, on the principle, that a man should not give the final report on his own work. On the Roads, however, the Superintendent provides the material himself, which is merely laid on the Road by the Executive Officer. For my own credit I must say, that on joining the office I requested the Executive Officer to reject bad material, which he consented to do. The Superintendent receives the Khoa material from a Contractor, who has agreed to furnish a certain supply for a certain number of years.

15. Regarding the mode of measuring the Khoa, which at present is very faulty, I have already sent a report Chief Magistrate's letter of 12th April, 1837, to the address of R. D. Man-gles, Esq. to Government, recommending the construction of Pucka Reservoirs, the outlay for which will I trust be sanctioned.

16. Of the Overseers or Scavengers, four of them have charge of four Divisions of the Town, divided as the Police Divisions, with the Strand and Esplanade cut off: these four are responsible for the cleanliness of their Divisions, and bring to the notice of the Magistrates offences under the Bye-Law of 1814, as far as it relates to the Conservancy. They have been placed under my orders, and as far as the expenditure of money is concerned, are under my controul; two of them have charge of the Gowkhannas, in addition to their Divisions, and have to feed and take care of the Cattle, as well as repair Carts, &c.

17. Another has charge of the Esplanade, and is Conservancy Constable: he also lays down the material on the Esplanade Roads, with which, in ordinary cases, the Executive Officer has no concern.

18. Another has charge of the Strand Division, which extends from the Strand Road to Clive Street, Tank Square, and Durmahatta Street; he has the scavenging of the Division, and also the River scavenging, or Establishment for sinking bodies and filth; he also has charge of the Roads in his Division, and provides the material himself, not through the Contractor, for the remainder of the Town.

19. This Overseer, also, for the duty of landing stone ballast from ships, and preparing it as material for Roads in any part of the Town.

20. The remaining Overseer is over the Watering and Lighting, in the Watering Department; he merely has charge of the Esplanade, Chowringhee Road, and Chitpore Road, as far as the Aqueduct extends. The other Overseers, excepting two, have charge generally of the Watering in their Divisions. Of these, one in charge of the South Gowkhanna, was allowed to give up charge of the watering; and the other, the Esplanade Overseer, does duty as Muster Master, attending the musters in the morning, which take place of all the Conservancy Working Establishment;—on the Circular Road, at the end of Mochowa Bazar Street for the two Northern Divisions; and at the Moulalli Durga for the two Southern Divisions; the Strand and Esplanade Establishments muster by themselves.

21. My Report on the manner of obtaining the Conservancy Native Executive Establishment, is already before Chief Magistrate's letter, 28th April, 1837. Government.

22. I am aware that the Fever Hospital Committee now sitting, have made it a portion of their inquiry, to ascertain how far it might be practicable to introduce the system of scavenging by contract into Calcutta, which has been found to succeed so well in Great Britain. The system of contract the Committee have in view, is intended, I imagine, to be made and carried into effect, under the auspices of certain Government servants, or persons under the controul of Government, while superintending the operation of the contract, whether Police Magistrates, or a Board of Conservancy or Health.

23. Unless these contracts were entered into with men possessing considerable capital, or command of money, I do not see how they could be carried into effect; and I think it very doubtful that Natives of respectability would accept such contracts. That a European with money would enter into such a speculation, when there are so many better openings in a place like Calcutta, daily increasing in commercial prosperity, it appears to me preposterous to suppose. There is no managing a contract with a Native, unless a large deposit of money be obtained from him—the Khoa Contractor for Calcutta deposits a sum of six thousand (Sa. Rs. 6,000) Sicca Rupees. Now a contractor for a Division of Calcutta would be required not only to deposit his security, but to expend at once about six thousand rupees in Carts, Cattle, and Shelter, in addition to his advances and monthly expenses. I state this under the idea that the contract system is to provide for the cleanliness of the Town in a more efficient manner than is done at present. If the old system of Bengallee Hackeries and broken-winded Bullocks is to be reverted to, there will doubtless be many competitors for the contract; but the Streets will again become the receptacles of half the filth taken from the Drains, and the reciprocal receivers of each others dirt.

24. The reason that these contracts have succeeded in England is, that the refuse and dirt of Towns in that country are so very valuable; but of what value are they here? Little or no manure is used in the surrounding cultivation, and it frequently happens that there is a difficulty in obtaining places for the deposit of Town Dirt and Rubbish;—a considerable portion is thrown into the River, and where this cannot be conveniently done, the Contractor will

call on the Conservancy or Government authorities to point out places in which he is to deposit the dirt he has stipulated to remove.

25. The above are mere opinions on the probable success of an untried scheme. If, after mature consideration, a Committee who have collected a mass of evidence concerning the Conservancy of the Town, recommend its experimental adoption by Government, I am of opinion that the experiment should be tried; the necessity, however, of vesting the controuling body with a discretionary authority, similar to that granted to Commissioners under the Act 57, Geo. III. or "London Street Act," Chap. 29, Sec. 118, for compounding for breaches of contract, will be apparent.

26. Were this contract system, and other Conservancy measures proposed to be adopted, under the entire Municipal controul of the Citizens, independent of Government influence, I should propose that, that controul should at first be made experimental in a Division of the Town, in which the inhabitants should agree to take it. My own opinion is, that the European Community of Calcutta have not yet attained a sufficiently permanent state of existence to enable them to exercise an efficient controul in Municipal self-government. Among the Natives of the country, East Indians, Mussulmans, or Hindoos, there is undoubtedly much talent to be found, but I do not believe that a hundred years of British rule have imparted to them that energy which would be found necessary to uphold Institutions copied in principle from British examples.

27. At the same time it does not appear that the inhabitants themselves are particularly anxious to acquire Municipal self-controul: a few inhabitants, who may be found taking the lead at Publick Meetings, and dictating the Resolutions that are therein to be passed, may desire it for their self-aggrandizement; but I do not believe that the generality of the Community desire their attention to be distracted from their more immediate concerns. The real controuling power being thus inefficient, I would ask, what substitute could be obtained for the vigilant surveillance exercised by Government over their Establishment.

28. The constitution of the Municipal Committee will shew that the Publick take little interest in the important inquiries making by that Committee: all the European members except two, are salaried servants of the State; the vacancy occasioned by the departure for England of Mr. Rogers, was with difficulty filled up, and it was also with difficulty that a salaried Secretary to the Committee could be obtained. The Natives appear more interested than the Europeans, but they will not be entrusted with separate controul.

29. It appears to me, that it would be more likely to produce a feasible plan for the Municipal Improvement of the Town, were those persons whose duty it is to provide or suggest such improvement, under the knowledge that every European inhabitant of British India arrives in the country with the idea and hope of revisiting his Native land with competence or wealth; and also, considering the nature of the Government of the country, to found their plans of improvement on examples, which have succeeded in States whose Government approximates more in character to that of British India than that of Great Britain itself, and whose inhabitants are more under the influence of that centralizing system which "in Calcutta produces a cry on the Government for succour, on every occurrence of the least unusual nature." The cleanest and best organized Towns on the continent of Europe might be selected as examples, and inquiries made into their Municipal arrangements;—the Government could materially assist this inquiry by the purchase of books in which detailed accounts of Conservancy improvements, &c. are given.

30. To return to the European Conservancy Establishment in Calcutta—I think the Government will, without further explanation, understand, that the superintendence of the Roads, 120 miles in length, *has not been properly provided for.** The Establishment I would recommend in lieu, is as follows—

A Superintendent with full powers over all the Establishment, except the Executive offices.
An Executive Officer for Buildings. †

Two Overseers in charge of Gowkhannas. §

Four Scavengers, who will each have charge of a Division of the Town, divided exactly as the Police Division, including the Esplanade, and portions of the Strand Road now cut off.
Two Road Overseers, each to have half of the Town, and superintend the landing and breaking of Stone Ballast in his Division, as well as the repairs of roads with Khoe or Stone.

*The roads are very good for a Town. Metropolitan Cities of England are not better off.

(Sd.) D. M. FARLAN.

† Kept to this alone on its present footing he would not have enough to do. Were the whole publick buildings added, the plan might answer.

(Sd.) D. M. F.

§ I think this hardly necessary. (Sd.) D. M. F.

31. The duties of the Scavengers will be the cleaning of the different Divisions under their charge, and the prevention of nuisances and encroachments in the Drains.

The Road Overseers will receive the Road material approved by the Superintendent, who employs an Establishment for the purpose of examining and measuring it at the Dépôts—they will prevent the road-ways being obstructed by rubbish or dirt, and also put a stop to encroachments—the Scavengers and Overseers will report all matters to the Superintendent, and cases requiring investigation will be forwarded to the Chief Magistrate, or other authority provided.

<i>The present Establishment consists of</i>										<i>Co's.</i>	<i>Rs.</i>	<i>As.</i>	<i>p.</i>
Mr. Statham, Esplanade,	..	..	..	..	..	..	..	..	..	104	8	0	
Mr. Clark, Strand,	..	..	..	..	..	..	..	..	..	168	8	0	
Mr. M'Culloch, Lower North Division and Gowkhanna,	..	..	..	..	..	..	..	..	..	177	13	10	
Mr. Green, Upper South Division and ditto,	..	..	..	..	..	..	..	..	..	167	3	2	
Mr. Tweedale, Upper North Division,	..	..	..	..	..	..	..	..	..	146	8	3	
Mr. Campbell, Lower South Division,	..	..	..	..	..	..	..	..	..	146	8	3	
Mr. Siret, Watering and Lighting,	..	..	..	..	..	..	..	..	..	73	5	10	
Total,										984	7	4	
Add to this the new Overseer proposed										100	0	0	
Total,										1084	7	4	

32. In the above I have included in the Salaries, the watering allowance of 16 rupees a month, allowed to certain Overseers for eight months in the year—present incumbents will of course retain their present Salaries, or at all events sustain no diminution. The new establishment proposed by me would be as follows.

2 Gowkhanna Overseers, at	.....	....	160 Rs.	320
2 Scavengers, at	....	....	120 „	240
2 Ditto, at	....	....	100 „	200
2 Road Overseers, at	....	....	160 „	320
Total,			Rs.	1,080

In my report of 28th February, 1837, forwarded with the Chief Magistrate's letter of the 28th ultimo, I find I have proposed placing the repairs of the Roads under the Scavengers; this would be an improvement on the present system, but would not answer with the alteration in the Bye Laws, suggested in a following part of this letter. It, as I am about to recommend, the Bye Laws be made more severe and more explicit than at present, and the enforcement of their provisions insisted on, the Scavengers will be fully employed in attending to their legitimate duty.

in common with Overseers in the Department, could, when it was found that they did not perform their duty efficiently under one officer, be sent to serve under another some few hundred miles distant.

34. The Conservancy Sirkars that I mentioned in the beginning of this letter were formerly twenty, and now seventeen in number. These men being under nominal Magisterial controul, are under no controul whatever; and they are generally believed to receive, in many portions of the Town, contributions from the inhabitants, trebling and quadrupling their salaries; the effects of the system may be seen more plainly in the Chitpore Road and Burra Bazar, during the middle of the day, than at other places; the Streets in those quarters are almost blocked up with temporary encroachments.

35. The Executive Officer is allowed eight Mate Coolies and twelve Peons, for superintending the measuring material for the Roads; Messrs. Clark and Statham are allowed two Sirkars and four Peons, the expense of the whole is,

17 Conservancy Sirkars, at Rs. 10	..	..	..	..	170	0	0
20 Peons, at 5	..	..	..	..	100	0	0
8 Mate Coolies,	..	..	..	..	32	0	0
12 Road Peons,	..	..	..	..	60	0	0
1 Sirkar (Mr. Statham's,)	..	..	..	..	10	0	0
1 Ditto (Mr. Clark's,)	..	..	..	..	6	0	0
4 Peons (Clark's and Statham's,)	..	..	..	..	20	0	0

Total, Company's Rupees **398 0 0**

36. In lieu of these, I would propose eight Sirkars paid sufficiently well to make the loss of their situations a thing to be avoided for the sake of the salary alone; and the situation itself too valuable to be risked for a bribe. These Conservancy Sirkars should be under the Superintendent, and report all nuisances and encroachments they observe—the Scavengers and Overseers being hardly sufficient to observe all; to each Sirkar I would allow a Peon to assist him in his Division.

37. To the Road Overseers I would allow each two Sirkars, to assist them in preparing stone material, and receiving khaa for different Roads, and the same number of Peons as at present allowed to the Executive Officers and Messrs. Statham and Clark, between them.

The expense would be per Mensem,

8 Conservancy Sircars, at Rs. 30	..	..	..	Rs. 240 0 0
8 Ditto Peons, at .. 5	..	..	..	40 0 0
4 Road Sirkars, at .. 10	..	..	..	40 0 0
16 Ditto Peons, at .. 5	..	..	..	80 0 0

Total Company's Rupees 400 0 0

38. The modifications I have herein proposed, will be found not to clash with those in my former Report on the Chief Magistrate's letter 28th April, 1837, forwarded through the Military Board. Establishment, but rather to carry them on, in as much as they relieve the Scavengers of certain extra duties therein contemplated. I also therein proposed separate Overseers for the Gowkhannas, without whom my plan would not be feasible; and here I recommend, that in consideration of the increased number of pukka Roads in Calcutta, since the formation of the present Establishment, that a more efficient superintendence should be provided. I do not wish my own Road Establishment to be altered—they were remodelled some time since, with the sanction of the Chief Magistrate, after due consideration: they have given me satisfaction, and have caused great improvement in the quality of the material measured at the Depôts—this can be proved; and as Certainly. (Sd. D. M'FARLAN. I have no favourites, I can but regret it, should my not wishing to dispense with the services of those with whom I am satisfied, be considered as savouring of favouritism, when I recommend the removal of others; as far as regards the measuring, I have no more confidence in my own people than in the other Establishment, but then, as I have before reported, no precautions are taken respecting the measurement.

39. Having thus reported on the Conservancy Establishment, I beg leave to call his Excellency the Governor's attention to the existing Bye-Laws, for the Municipal Government of Calcutta, in the Conservancy Department.

40. The only law at present existing, is that of 28th October, 1814; in it the only provision against nuisance is in Sec. 2, and by it, any inhabitant of the Town may occasion whatever nuisance he pleases; and provided he removes it within four hours, he is beyond the operation of the law. The consequence of this laxity is, that the Streets are continually obstructed with dirt and rubbish—cart-loads of bricks, lime, and other goods are thrown on the Road opposite their destination, instead of being removed from the carts themselves to places where they are required—broad Roads, opposite merchants' warehouses, are sometimes two-thirds covered over with casks—horses and carriages are brought out of stables and washed in the Publick Streets, the latter frequently obstructing them completely when narrow, and always leaving a deposit of filth and dirty water, nobody being responsible for the nuisance, because nobody knows when the legal four hours commenced.

41. The crimes of throwing dirt into the Streets and washing carriages in them, are nuisances never even reported to the Magistrates, and the practises have become sanctioned by long usage, the Scavengers' Establishment picking up what dirt they find on the Road, instead of applying to the inhabitants to throw into the carts what has accumulated in their houses. The consequence of this is, that in the Native parts of the Town, a year's filth is frequently collected in one house, and thrown out altogether on the occasion of a marriage or other festival; and as Native marriages and festivals occur always at particular seasons, these internal periodical cleansings range throughout a whole district within a short space of time, and of course occupy a much shorter period in throwing the dirt out into the Street, than is required for its removal to a distance by the Scavengers' Establishment.

42. That portion of the section which relates to Drains, has also become a dead letter. All over the Native parts of the Town, Privies are built with their outlets on the Drains, and these Privies being cleaned by their proprietors as seldom as possible, filth of the worst description accumulates and clogs up the only passages for the water-drainage of the Town. I have seen many Privies opening out on Drains which border Streets; those on chains which run between the different collections of huts and buildings composing the Native parts of the Town, are nuisances bad enough, but those on the very borders of the publick Streets, are surely too horrible instances of filthy abomination to be allowed to remain, when once brought to the notice of Government. (Sd. D. M'FARLAN. I always thought that these cases had only to be brought forward to meet with adequate punishment by fine. (Sd. D. M'FARLAN. These are punishable, and the resort to the Bench should be shewn to be ineffectual. (Sd. D. M'FARLAN.

43. The Drains are also continually clogged with cow-dung, especially during the rains, when large masses that have been collected for sale or other purposes, burst their bounds, and of course find their way to the Drains: these occasion more labour than any nuisance I know of: they frequently cannot be removed until they have been baked by the sun into a crust.

44. There is one nuisance which appears to have escaped the powers of this * Regulation altogether; that is, the number of green, slimy receptacles of dirty water in the Town, half hole, half tank; these are to be found in hundreds, and are occasioned either by want of money to complete Tanks commenced, or by earth being removed to raise the floors of huts and houses. The quantity of vegetation and low jungle in the Native Town, is also unnoticed; in fact, from the whole of the Regulation it appears, that so long as Drains and Streets were kept free and clean, that no farther measures were deemed necessary towards the preservation of publick health in the Town.

* Section.
There was of course great jealousy shown against investing a Police with the power of invading private property.
(Sd.) D. M. FARLAN.

45. With reference to Sections 3 and 4, I am not aware of the existence of any balconies, rails, &c. obstructing the passage of Streets; there are many encroaching over, and impeding the passage and cleansing of the Drains, and many houses have spouts from the roofs, which throw a considerable volume of water during rain, much to the inconvenience of passengers, and injury of the Road. In one or two places bay windows have been allowed. As to shambles and booths, they may be seen in every Bazar of the Town; and while they are a source of profit and revenue to the Conservancy Sirkars, may be expected to remain. In many narrow Streets the stable and other large doors opening outwards block the passage of the Street.

46. Encroachments below high water mark in the river Hoogly have become very common; so much so, that many of the inhabitants residing on the Strand consider the space left by the periodical reflux of the tide, as part of the property attached to their houses. These encroachments have lately attracted the notice and complaint of the Lottery Committee, but having arisen, in the first instance, from a license given by that Committee to deposit bamboos on a certain space West of the Strand Road, it is difficult to put a stop to them: if however the penalties of the 4th Section of the Bye-Law were enforced on some of the unlicensed offenders, I have no doubt but that the encroachments could be lessened.

47. The provisions of Section 5 are generally enforced, though there are many evident old encroachments in the Town which ought not to have been allowed, but which now very properly cannot be removed, as they have exceeded the limit of three months.

48. The evils above enumerated, have originated chiefly in the laxity of the Bye-Laws, and the utter absence of co-operation between the Police and the Conservancy; while it has been the interest of the Conservancy Sirkars and Street-keepers to withhold from the Magistrates the knowledge of the existence of encroachments which were to the Sirkars a profitable source of emolument. The Magistrates' Law withheld from themselves the assistance of the Police, in checking these encroachments. I complained of this want of assistance from the Police when I first joined my appointment, and was told that to assist the Conservancy was not the business of the Police, who were to attend to their own duties:—the Thannadars under such general instructions, have of course always understood that it was not their interest to make enemies of the Conservancy Sirkars, and that it was better for each class, separately, to enjoy its own opportunities of profit without interfering with each other.

49. I would not recommend a mere general order being given to the Police to assist the Conservancy Establishment, as a Native will always interpret a General Order his own way; but after making the alterations in the law, I shall hereafter specify, and allowing Street-keepers of equal salaries, and consequently of equal consideration to the Thannadars. I would propose, that in all cases of residence, and also defined cases of nuisance and encroachment, that the Street-keepers should be authorized to call upon the Police for assistance in causing the removal of nuisance, or prevention of attempted nuisance; and also prevention of encroachment; the matter to be reported to the Superintendent, and finally decided by the appointed Conservancy Judicial Authority. Can any one give a reason that a nuisance, (a Conservancy nuisance, that is offensive filth, or a dead dog) should have legal possession of a Publick Road for four hours?

Summons is always a more effectual remedy.
(Sd.) D. M. FARLAN.

50. The alteration I would propose in Section 2 would be to strike out the word "carriages," and the words "for the space of four hours" altogether from the first sentence. In the second sentence, commencing "Provided always," I would insert words to the effect, that no license shall be given until the licensing authority be satisfied that there is sufficient occasion for one; also that the license shall contain an injunction to owners of the land, &c. to whom it is granted, and builders employed by him, to remove within four days after the expiring of the license, or expiring of its renewal, if renewed, all material contained within the bounds of the license, whether bricks,

The four hours' limitation does not in any respect apply to such matters. It is intended to secure a man against punishment for keeping his carriage waiting half an hour at his door.
(Sd.) D. M. FARLAN.
At present it might be refused on that ground.
(Sd.) D. M. FARLAN.

time, &c. brought for building, or rubbish, &c. thrown out during the time of building or repair; this injunction being neglected, the owner and builders to be subjected to such penalty as the Government shall determine; say, a fine not exceeding twenty Rupees a day, after the time allowed. I have above submitted to the consideration of Government, whether the licenses shall be granted by Conservancy, Judicial, or Executive Authority.

51. I had omitted to state, that this injunction attached to license had become necessary, on account of many owners and builders in Calcutta having come to the conclusion, that it was the duty of the Scavengers' Establishment to remove rubbish thrown out during their repair, building, &c. from the long impunity they have enjoyed in obstructing the Streets with rubbish, and their habit of seeing such rubbish removed by the Conservancy carts. The Right Honourable the Governour will understand, what a tax upon the time and labour of the Establishment, the removal of this rubbish must be; and also how a driver (especially under the present contract system) may be induced to leave dirt on a Road, and remove rubbish from before the door of a man rich enough to repair or build a brick house, but sufficiently willing to be saved the expense of carrying away the refuse material.

52. I would also propose a separate Section or Clause (I know not the technical application of the terms, but their English meaning is sufficiently clear for this letter) in favour of carriages, which might still be allowed to remain four hours in one place, provided their contents were not thrown down into the Street and left there; and provided always, that they were not brought out into the Street to be washed and cleaned.

53. For the purpose of more effectually still providing against nuisance and dirt on the Roads, the Scavengers' Establishment should be organized; this could be done in continuation of my Report forwarded through the Military Board—the carts as well as coolies should be arranged in squads, and apportioned to different Districts in the Town; each driver or mate driver, to be provided with a bell, on hearing which the inhabitants should bring out their dirt to deposit in the carts. On a severe enactment against nuisance being promulgated and enforced, the Native inhabitants would see the necessity of adopting some more frequent system of cleaning than their present annual one, and would naturally be anxious to get rid of the dirt collected in their houses at once; to admit of this, I do not doubt that the Government would sanction the temporary hire of a number of extra carts. After the system had come into full operation, with the assistance of the Police, and the determined enforcement of the Law, in all cases of disobedience to its rules, I have little doubt but that the Conservancy Establishment would be able of themselves to manage more efficiently than at present, and that in a short time the calls upon the Police would become infrequent.

54. Instead of the fine of four annas, now usually awarded to persons whose Privies have been allowed to empty themselves into the Drains, I would propose an order directing all such as have doors opening out into Drains, to be at once closed with masonry, if the Privy be of masonry; and destroyed altogether, if merely of mats. I think if this measure were followed up by the Establishment of a few publick Tatties with cess-pools, that the example set by Government would have the effect of inducing house-keepers to open private cess-pools on their premises.

55. It would also occasion a great improvement in the Conservancy of the Town, were proprietors of publick Tatties required by a coercive enactment to dig cess-pools within a certain period after the passing of the Act, and to clean them out at certain periods, or close them until decomposition had taken place, after they had become offensive; also were no new licenses for publick Tatties granted, but under the condition of cess-pools being dug.

56. To put a stop to the nuisance of cow-dung falling into the Drains, which, with care might be prevented, the provisions of the proposed amended Section would be sufficient, provided they were enforced.

57. In order to put down the existing encroachments under Sections 3 and 4, I see nothing better than a proclamation, informing the inhabitants that any encroachments of the nature therein specified, existing after a certain date, will be removed by the Conservancy Department; and that the Superintendent of Conservancy has the power of removing all such encroachments as obstruct the passage of the Road, (or Drains, being a portion of the road) or tend to injure it.

58. I would also recommend a clause in favour of balconies and sun-shades, provided they are built not less than twelve feet from the ground; they are really necessary in this climate, and common sense has joined with humanity in rendering the Bye-Law in operation against them.

59. In order to bring Section 5 more efficiently into operation, I think it would be advisable to allow the head of the Executive Conservancy, the Superintendent, to give the notice required; any inhabitant deeming such

notice unjust, having the option of appeal to the Judicial Conservancy ; a Magistrate deciding a case, on which he has already issued a mandatory notice, appears in the situation of a judge and party in the matter at the same time ; it was not thought expedient to allow an Executive Officer to decide on his own work.

60. The only measures for which I have not proposed remedies, are the slimy Tanks and low jungle. To say that the Town would be much benefited by filling up the first, and cutting down the latter, and that the latter might be used partly to fill up the former, is to say, what no one will deny ; but the powers required to carry such measures into effect, including interference with the personal liberty and domestick economy of the inhabitants, are greater probably than would be conceded to a body composed merely of Magistrates, in a Town in which every publick act is referred to the Government, and when the Government is supposed to be mixed up with every order, and to sanction every measure. Here I think an example may be taken from the measures founded on the centralizing systems of continental powers of Europe, and that an authority may be created with defined but extensive powers, for the purpose of presiding over all Conservancy matters, and improving the publick health of the Town. If these great powers were found not to be used in a more arbitrary manner, or to interfere more with the domestick economy of the citizen, than is the case in Towns in Great Britain, I cannot see that any valid objection to them could be raised.

61. The authority I allude to, is a Board of Conservancy and Health, to be composed of the Chief Magistrate, Superintendent of Police, and other members as required, consisting of Medical men, Chemists and Geologists, Engineers, Merchants, and Tradesmen—attendance to be ensured by an adequate remuneration—a majority to constitute a quorum—one of the members could act as Secretary, with a small additional remuneration—the Superintendent of Conservancy to have a seat at the Board, but no vote.

See how this bears on the Finance question. We want money to execute works not to pay councillors.
(Sd.) D. M'FARLAN

62. Common Conservancy cases might, as at present, be decided by the Chief Magistrate ; in peculiar cases, such as disputes regarding publick boundaries, and cases involving private property, there might be an appeal to the Board, whose decisions should be final.

This would never answer, the Board should be Executive, not Judicial.
(Sd.) D. M'FARLAN.

63. An authoritative body thus constituted, might be expected to suggest to the Government many valuable projected improvements in the Conservancy of the Town, requiring legislation ; I could instance means to be taken to prevent the frequency of fire, but that I am aware that the Government already have that subject under their consideration.

64. Connected with the consideration of the prevention of accidents by fire, is that of the entire manner of building throughout the Town ; for the controul of which, there is not, to my knowledge, a single enactment in existence. A Police case occurred the other day, in which it appeared that an owner of landed property in Calcutta was prevented plastering a wall he had newly built on the edge of his ground, when finished ; his neighbour refusing to allow him to put scaffolding on his, (the neighbour's ground) for the purpose, and threatening to build a compound wall which would prevent the windows of the house opening ;—a law forcing every man who built a pukka house, to border his ground with a boundary wall, would have rendered such a case impossible, and prevented a good deal of ill feeling.

65. In the Native part of the Town, many of the houses are built in a manner called " Kutcha Pukka," that is, with walls of burnt brick and mud cement ; these houses from want of care, and often from the poverty of their owners, soon get into a ruinous state, and having no cement but mud, their walls are easily penetrated by water, which after a few showers of rain occasions their fall ; these walls being on the borders of publick Streets and Drains, in many instances whole districts are sometimes flooded by their fall, the water not running off until the clogged Drain is cleared ; they also frequently fall on other houses and huts, and destroy them ; and in some instances loss of life has ensued. It is not uncommon in the rains to hear of twenty different walls having fallen in one day. Sufferers from these nuisances have no means of redress, except in an expensive suit in the Supreme Court : this nuisance has existed for years, and has been well known to exist, without the Government apparently deeming it expedient to authorize the Magistrates to put a stop to it. I should imagine that the Government would gladly concede full powers to take down ruinous walls to a Board constituted as I have recommended.

66. Under this Board, the Executive Conservancy might exercise an efficient, and much required controul over the Publick Markets in the Town.

67. As far as I can recollect, I have now reported on the whole system of Conservancy in Calcutta. This Report I was desired to send in on first receiving my appointment, but from the action of the system against which I complain, which conceals from the head of the Executive much of importance that is going on in the Conservancy Department, I have hitherto felt myself inadequate to submit a detailed Report. All that I have stated, I believe to be correct, though in many instances I must acknowledge my information from the above cause to have been from hearsay ; it will however be acknowledged, that I have as many opportunities of hearing what is going on in the Conservancy, as most persons, from whom information could be expected. I trust it will not be supposed that I have touched on matters with which I have no concern.

I have the honour to be, &c.

(Signed) W. ABERCROMBIE, 2nd. Lieut.

Superintendent of Roads, Conservancy, and Publick Works, in Calcutta.

(True Copies)

R. D. MANGLES,

Secretary to the Government of Bengal.

JUDICIAL DEPARTMENT,

6th June, 1837.

Z. 25.

A Report on the Conservancy Establishment, by Lt. W. Abercrombie, submitted by the Chief Magistrate to Government through the Military Board.

This Paper contains a proposal for modifying the Establishment at present employed in the Conservancy Department, with a view of constituting a regular system of management, to be followed by the Superintendent and Overseers, and of cleansing the Town as far as possible in an effectual manner, with as little expense as may be.

In this Paper I take no notice whatever of the repairs or charge of the Roads, or of the repairs of the Drains, but merely the cleansing them. Complaints of the dirty state of the Drains &c. are numerous, and frequently well founded, except that the complainants forget that they themselves are in the first instance the occasion for any ground of complaint, by using the Drains for purposes for which they were not intended, and for which they are not adapted.

The chief evil consists then, in the Conservancy of the Town being unequal to the wants of the inhabitants, and consequently no system of Management can be expected to give entire satisfaction with the present means of cleansing the Town, I mean with the present system of Drainage and Sewerage. At the same time, some improvement in the management may be expected to accrue from a stricter attention to details, and chiefly from making it the interest of the subordinate Native Establishment to pay attention to what is placed under their care, instead of as at present to neglect their public duty, for wages given by individuals on account of private work, at times when they can be absent from their duty without much probability of detection by the Overseer.

All the Subordinate Native Establishment are at present supplied by a Contractor, who is allowed a certain rate of pay for each grade, and receives the same, whether the work be performed well or ill; he of course makes a profit by deducting a certain proportion in his own favour from each grade.

The following will shew particulars of Establishment provided in 1835.

1835.	Box Carts.		Hackeries.	Sirdars.	Loading Coolies.	Drain Coolies.	Drain Boys.	Sirdar Mehters.	Mehters.	Sirdar Doones.	Doones.	Peons.	Sikhs.
	Company's Bullocks.	Hired Bullocks.											
Total allowed.....	160		100	4	120	640	120	4	48	4	16	24	4
Daily average supplied in 1835.													
Upper North Division,	0	21	29	1	41	124	23	1	11	1	4	6	1
Lower Do. Do.....	10	15	20	1	41	123	16	1	14	1	4	6	1
Upper South Do.....	1	23	29	1	41	132	22	1	12	1	4	6	1
Lower Do. Do.....	0	16	39	1	41	111	24	1	12	1	4	6	1
Total daily average of 1835..	11	75	117	4	164	490	85	4	49	4	16	24	4
Total number employed in 1835.....	3,912	27,760	43,119	1,460	60,272	179,658	30,875	1,460	18,008	1,460	5,070		
Daily average in each Division from May till October,													
Upper North Division,	0	21	28	1	41	113	23	1	11	1	3	6	1
Lower Do. Do.	13	15	19	1	40	110	14	1	14	1	3	6	1
Upper South Do.	1	21	30	1	42	130	22	1	11	1	4	6	1
Lower Do. Do.	0	16	37	1	41	108	23	1	11	1	3	6	1
Daily average in each Division in other (6) months,...													
Upper North Division,	0	21	30	1	40	139	22	1	11	1	3	6	1
Lower Do. Do.....	7	15	23	1	42	136	16	1	14	1	3	6	1
Upper South Do.....	1	25	29	1	41	133	22	1	12	1	3	6	1
Lower Do. Do.	0	16	39	1	41	114	24	1	11	1	3	6	1
Establishment recommended.													
Upper North Division,....	36	0	0	0	36	125	20	1	11	1	4	6	1
Lower Do. Do.....	35	0	0	0	35	120	15	1	14	1	4	6	1
Upper South Do.....	40	0	0	0	40	130	22	1	12	1	4	6	1
Lower Do. Do.....	35	0	0	0	35	110	24	1	11	1	4	6	1

In recommending the above scale of Establishment, it will be observed, that I have taken the number that was actually employed in one year as my guide ; and I expect a similar number, under different management, to perform the required duty better than it is performed at present.

I propose to do away altogether with a Contractor, and entertain a regular Establishment in each Division, paying the different grades the full amount in all cases allowed for each individual to the Contractor by Government, and in some cases more than is now allowed—there can surely be little difficulty in entertaining our own Establishment at an advanced rate, paying them better probably than private individuals are in the habit of doing.

The above recommended Establishment being on the scale of the old one, there are a few explanations necessary, as well as some modifications required.

I propose to do away with hired Hackeries altogether, as they are not adapted for Conservancy purposes, being in fact constructed for different carriage ; and as asserted by Mr. Watts in a Paper on this subject drawn up by him, never hired in the Conservancy Department until they and the Bullocks that drag them are unfit for a Custom House load : one Box Cart is substituted for every two Hackeries. The Sirdars are entirely struck off the amended Establishment : they are men allowed to the Contractor for collecting Coolies, &c. and they, as well as the Contractor, make a deduction from the pay of the Coolies, &c. in their own favour. Why they should receive salary when the Contractor does not, I cannot say ; at all events it is clear that there can be no use for them in the amended Establishment, as each Overseer is allowed a Sirkar.

The Carts above recommended are all large Carts ; a smaller description however, drawn by one Bullock, has lately been tried in the Department, and found to answer extremely well. I would therefore alter the number above recommended to the following, the large Carts being drawn by Horses, and the smaller by Bullocks.

	Large Carts.		Small Carts.		Total.
Upper North Division.	20		20		40
Lower, ditto ditto,	20		20		40
Upper South ditto,	20		30		50
Lower ditto ditto,	20		20		40
Total,	80		90		170

One Driver out of every five should be a Mate, and receive an extra rupee per month.

The number of loading Coolies being one to each Cart, will be altered to correspond with this last arrangement.

Of the men reported as Drain Coolies, it must be explained, that in each Division about 25 are called Coolies, but are employed as Mates, and actually at present do nothing, under the pretence of superintending the work of others, excepting that they, I believe, are the people generally applied to by private individuals hiring the Conservancy Coolies ; they receive no nominal pay above the Coolies, but the Contractor gives them the full allowance he receives from Government.

I would have 18 Mates to each Division, on an increased rate of pay, as each Overseer is allowed 6 Peons ; each Peon has a Subdivision to superintend, and it will certainly be easy for each Mate to undertake the superintendence of one-third of the Peon's Subdivision, for the state of which he will be responsible.

	Coolies.		Mates.		Coolies.		Total.
Then in Upper North Division, . .	126	give	18	+	108	=	126
Lower ditto ditto, . .	120	. .	18	+	102	=	120
Upper South, ditto, . .	130	. .	18	+	114	=	132
Lower ditto ditto, . .	110	. .	18	+	96	=	114
Total,	485	. .	72	+	420		492

One Sirdar Doome appears enough for the whole Town.

The amended Establishment will therefore be.

Box Carts	Large	Horse,	80
Ditto,	Small	Bullock,	90
Coolies	Loading,	..	170
Ditto	Mates,	..	72
Ditto	Drains,	..	420
Ditto	Ditto	Boys,	81
Mehter,	Sirdar,	..	4
Ditto,	..	..	48
Doome,	Sirdar,	..	1
Doome,	..	..	16
Peons,	..	..	24
Sirkars,	..	..	4
Bheesties,	..	..	24

Bheesties have lately been found necessary in the two Southern Divisions of the Town, to wash out Surface Drains, &c., these will be added in, in finding the expense for 1835, to obtain a fair comparison as they are at present employed, and the comparison is between the systems, though a particular period of the old system is selected for convenience sake ;

It will now be understood, that I wish the New Establishment to consist of regular servants, and the dead and live stock to be bonâ fide Company's or Town property, which ever the case may be. The Establishments can be mustered every morning as usual and sent to their work—task-work being introduced wherever practicable ; in general practice, however, I would recommend that each Mate and squad of Coolies had a particular extent of Drain placed under their charge, and that they were made responsible for the cleanliness of it : that so long as this was clean, and they attended muster every morning, nothing farther should be required of them ; but that immediately any negligence were detected, on the Report of the Peon, to be verified by the Overseer himself proceeding to the spot, or by the observation of the Overseer himself in the first instance, they should be punished with fine or by discharge.

I would also recommend that the Superintendent should be empowered to punish by fine, and encourage by reward, any of the Native Establishment—neither fine nor reward exceeding a month's pay.

To compare the expense of the present Establishment with that recommended, I will first take the Establishment supplied in 1835 at the rates allowed to the Contractor.

3,912 Pair Co's. Bullocks at 365 per 168 Sa. Rs.	..	..	..	..	1,800	9	6
27,760 Do. Hired Do.	..	..	..	..	12,777	3	3
43,119 Hackeries, 365 per 108 Sa. Rs.	..	..	..	..	12,758	7	11
1,460 Sirdars, 69 .. .. .	..	..	..	..	240	0	0
60,272 Loading Coolies. 42 .. .. .	..	..	..	..	6,935	2	2
1,79,658 Drain do. 42 .. .. .	..	..	..	..	20,672	15	7
30,875 Drain Boys, 30 .. .. .	..	..	..	..	2,537	10	9
1,460 Sirdar Mehters, 60 .. .. .	..	..	..	..	240	0	0
18,008 Mehters, 48 .. .. .	..	..	..	..	2,368	2	9
1,460 Sirdar Doomes, 60 .. .. .	..	..	..	..	240	0	0
5,070 Doomes, 48 .. .. .	..	..	..	..	666	11	6
24 Peons, 12 months, at 5 Sa. Rs. per mensem, .. .. . *	..	..	..	..	1,440	0	0
4 Sirkars. Do. 6 Do. Do. .. .. .	..	..	..	..	288	0	0
Total, Sa. Rs. ..					62,964	15	5

Add, as before explained, the pay of 24 Bheesties for 12 months, at 4 Rupees per mensem 1,152 0 0

Total, Sa. Rs. .. 64,116 15 5

Company's Rs. .. 68,391 6 10

There are at present on the Establishment 102 large Box Carts and 13 small ; of the former, 15 are for Horses, and the remainder could be altered and adapted as required. 77 additional small Bullock Carts would be required to be made up.

There are in the Gowkhannas 29 Bullocks and 36 Horses, so that 61 of the former, and 44 of the latter, should be purchased as speedily as possible.

The immediate outlay would be,

77 Small Carts, at	Co's. Rs.	55			4,235	0	0
61 Bullocks, at		22			1,342	0	0
44 Horses, at		30			1,320	0	0
77 Sets Bullock Harness, at		13			1,001	0	0
65 ditto. Horse Do. at		13			845	0	0
Total, Co's. Rs.					8,743	0	0

The value of the regulated Stock would be,

80 Large Carts, at	Co's. Rs.	85			6,800	0	0
90 Small Do, at		55			4,950	0	0
80 Horses, at		30			2,400	0	0
90 Bullocks, at		22			1,980	0	0
170 Sets of Harness, at		13			2,210	0	0
Total, Co's. Rs.					18,340	0	0

The Salaries of the modified Establishment would be,

80 Horses with Syces, at	Co's. Rs.	16 per mensem,		1,280	0	0
90 Bullocks with Drivers,		at 9		810	0	0
34 Mate Drivers,		at 1		34	0	0
170 Loading Coolies		at 3-8		595	0	0
72 Mate Coolies,		at 4-8		324	0	0
420 Drain Coolies,		at 3-8		1,470	0	0
81 Do. Boys,		at 2-8		202	8	0
4 Sirdar Mehters,		at 5		20	0	0
48 Mehters,		at 4		192	0	0
1 Sirdar Doome,		at 6		6	0	0
16 Doomes,		at 4		64	0	0
24 Peons,		at 5		120	0	0
4 Sirkars,		at 7		28	0	0
24 Bheesties,		at 4-8		108	0	0

Total Monthly Expense, 52,53 8 0

Total Annual expense, 63,042 0 0

Add interest of outlay on Stock, which will of course more than cover the expense of turning Bullock Carts into Horse Carts.

6,800 Carts, at 12 per cent per Annum,				816	0	0
4,950 Do. Do. Do.				594	0	0
2,400 Horses, 25				600	0	0
1,980 Bullocks, 10				198	0	0
2,210 Sets Harness, at 50 per cent,				1,105	0	0

Total, 66,355 0 0

Former Expenditure, without taking into consideration wear and tear of Carts, &c.

at present in the Establishment, 68,391 6 10

Remainder in favour of New Establishment, 2,036 6 10

Thus is obtained a decrease of expenditure of 2,000 Rupees, the interest at 4 per cent. of 50,000 Rupees, while the immediate outlay will be but 9,000 Rs. If the New Establishment herein recommended be approved of, it might be advisable to authorize the Superintendent to commence on it in one Division of the Town, say from 1st August. Until Horses, &c. can be purchased for the Division in which the new system will be first tried, I would recommend Bullocks being hired, but hired by the Conservancy, and housed and fed by them, and not received from a Contractor.

W. ABERCROMBIE, 2d. Lieut.

Superintendent Conservancy.

*Calcutta Police Office, }
16th July, 1836.*

No. 2,062.

In continuation of my Report of 16th July, 1836, I now submit plans of the required alterations to the Gowkhannas, and estimates of their expense, prepared by the Executive Officer. Before proceeding with them, however, I must correct an inadvertency in the former Report.

Add annual allowance to Contractor for Tools, ...	480	0	0
Add shoeing 80 Horses, at 12 Rupees per annum,	960	0	0
and	Total,	1,440	0 0
Deduct 90 Loading Coolies, at 42 Rupees per annum,		3,780	0 0
	Total,	2,340	0 0
Former amount saving calculated, ...		2,036	6 10
	Total saving,	4,376	6 10
Reducing the annual expenditure to ... Co's. Rs.	64,015	0	0

The deduction is on account of the small Carts, the drivers of which load as well as drive.

The necessity of the alterations and additions required at the Gowkhannas, for the accommodation of Carts, &c. is self-evident. The additional ground required at the Northern Gowkhanna, contains 12 cottahs, 10 chittacks of ground, which should rent at 8 Rupees a cottah, per annum. It cannot be purchased, as the proprietor is unwilling to sell so small a portion of his land.

Regarding the Overseer's house, I beg leave to submit my Reports of 11th May, 1836, and 9th June, 1836, and also to state, that I inspected the house several times after preparing them, and saw that the floors during the rains were excessively damp. It is impossible that a European can live in it in its present state, and the best remedy I can think of, consistent with the additions required to the Gowkhanna, under a sanctioned revision of the Establishment, is to provide upper-roomed quarters, as shewn in Plates, I. and II.

At present the Overseer in charge of the Gowkhanna, receives 32 Rupees a month house rent.

All the accommodation in the Northern Gowkhanna being taken up by the increased number of Carts and Cattle, it is proposed that the Fire Engine and Water Carts, be removed to the Haidou Tank, where 3 cottahs of ground being taken in, in addition to the number at present rented for, the pound will provide room for them at the expense detailed in the accompanying estimate, viz. Rs. 450: 3: 11, in addition to the ground rent.

I do not however add this to the expense of cleaning the Town, as room must be provided for the Fire Engines, and Water Carts; and I do not see at all why they should be provided for at the expense of the cleaning Department.

In the Southern Gowkhanna, I merely proposed opening out a wall in the old Police Hospital, a building at present *useless*, so as to make it available for a Garikhanna, and to build a store-room for grain.

The outlay required, therefore appears to be

Northern Gowkhanna,	Co's. Rs.	7,365	0	0
Southern Ditto ditto, . . .		160	0	0
Purchase of Tools, old and new, . . .		400	0	0
	Total, ..	7,925	0	0
Add formerly reported outlay.		8,743	0	0

Total outlay, Co's. Rs. 16,668 0 0

The annual expenditure therefore would be as reported above,	64,015	0	0
7,525 Rupees of Buildings at 2 per cent.	150	8	0
12 cottahs, 10 chittacks ground, at 8 Rs.	101	0	0
Tools, taken as at present 40 Rs. per mensem, ..	480	0	0
	Total,..	64,746	8 0
Deduct Overseer's House rent at 32 Rs. per mensem.		384	0 0
Total Annual Expenditure		64,362	8 0
Former Ditto ditto,		68,391	6 10

Remainder in favour of New Establishment. 4,028 14 10

The repairs of the Buildings at present in existence I have not included in the former expenditure, and have therefore not added to the new expenditure in the comparative statement.

I have but one more remark to make regarding expense, viz. that the Overseer's house rent, Co's. Rs. 384 per annum, amounting in value at the Government interest of 4 per cent. per annum to Co's. Rs. 9,600, covers the whole expenditure required for the Northern Gowkhanna, and one-fourth the outlay for stock. Most of the Carts required have been made up by order of the Chief Magistrate, but Cattle cannot be purchased for the whole for want of accommodation.

The diminution of annual expenditure might, in my opinion, be very advantageously laid out, in allowing two extra Overseers to be placed in charge of the Gowkhannas, and have in addition merely the duty of collecting Establishment, and delivering them over to the working Overseers, who in addition to their duty of cleaning the Streets, it is recommended may have the repair of the Roads: the expense would be,

Two Overseers, at 1,800 Rs. per annum, ..	3,600	0	0
Two Ditto, Writers, at 180 ditto, . . .	360	0	0
	Total Co's. Rs. ..	3,960	0 0

The Roads are at present repaired by the Executive Officer under the orders of the Superintendent, the Overseers of the Town (excepting the two in charge of the Gowkhannas) having nothing to employ them beyond the Scavenging. As the Executive Officer has fully more duty than he can well attend to, I am decidedly of opinion that it would be an advantageous arrangement to provide Overseers for the Town, of education equal to those in the Department of Publick Works, and relieve *him* entirely of the repair of the Roads, which could be carried on by the Overseers, under the orders of the Superintendent. The Overseers in charge of the Gowkhannas, under the proposed systems, could not attend to the duty of Scavengers; their constant attendance at the Gowkhannas would be necessary; that could be no impediment to their entertaining Establishment. If however this be not approved of, I would strongly recommend some other arrangement being made, having for its object the certainty of the Establishment employed, receiving the whole of the money allowed them by Government. No one could provide Establishment better than the present Contractor, and if he were entertained for the purpose on the new plan, and allowed a salary of Co's. Rs. 215 per mensem, the propositions would have the additional advantage of not interfering with "vested rights," supposing those latter to be allowed to weigh against publick improvement.

W. ABERCROMBIE, 2d Lieut.

Calcutta, 18th February, 1837.

Superintendent of Roads and Conservancy.

P. S. I had omitted to notice that the former estimates amounted to above 500 Rupees, for putting the Overseer's house in the Northern Gowkhanna in a state of repair, which in my opinion would have been incomplete. This amount should be deducted from the extra outlay recommended in this Paper; it can however be set off against the expense of buildings for the Water Carts and Fire Engine not provided for in the Northern Gowkhanna, amounting to Rs. 450, if that expense be considered additional to the suggested improvement in the cleansing Establishment.—2d March, 1837.

To ROSS D. MANGLES, ESQUIRE.

Secretary to the Government of Bengal.

SIR,

I have the honour to submit two Papers drawn up by Lieutenant Abercrombie, containing a proposition for modifying the Establishment of the Conservancy Department, with the view to ensure efficiency. This subject has occupied much of the attention of that Officer, and under the impression that a system of contract for cleansing the Town is not likely to be adopted, I beg to recommend these Papers to favourable consideration.

2nd. In 1824, a complement, as it is called, or the number of Carts, Coolies, &c. deemed requisite for cleansing the Town, was fixed by Mr. Shakespear as Chief Magistrate. A memo. of that is given by Lieutenant Abercrombie at the head of his Table. I have always considered that complement to be high, and the supply of labourers has on the average, been much below it. Lieutenant Abercrombie now adopts the statements of 1835, as his guide. I am

* It is not an uncommon sight to see a dozen or more of the Conservancy Establishment amusing themselves in shady little earnings at labour.

not satisfied, that even less than that amount might not be sufficient;* indeed, Lieutenant Abercrombie seems himself to admit that it would, for he presumes that the Establishment "neglect their public duty for wages given by individuals." I think therefore, that in employing a regular Establishment of labourers we might fix the maximum, or complement, at a lower point

than even Lieutenant Abercrombie assumes.

3d. Indeed it is in general easier to increase an Establishment, proved to be too weak, than to reduce one that is too strong. Lieutenant Abercrombie proposes even to allow of the cleanness of a given Division being taken as a ground of non-interference, by the superintending authority, with the Establishment. The other side of the question must obviously be considered, viz., whether the given Establishment could not clean a larger circle?

4th. One of the most important duties devolving on the Superintendent is, the due apportionment of the labour of the Conservancy Establishment, and reducing the strength of it to the lowest point† consistent with efficiency. I may remark, in passing, that fault cannot be justly imputed to the scavenging of the Town filth; such as house and stable sweepings, are effectually cleaned out when the season admits of it. The real evil is, that in general the Drains are open, and the covered Sewers, even, have openings at all points. No effectual remedy for the nuisance thereby occasioned, can be found in the mere increase of the numbers or activity of the Establishment.

† I am unwilling to recommend a reduction of carts, dooms, &c. The labour of the carts is every day increasing, from the difficulty of finding places for the deposit of sweepings.

5th. In the event therefore of Government sanctioning the change from the present contract to a monthly Establishment system, I would suggest that the scale should be fixed at 10 per cent. in the item of coolies, below that given as the average in 3d page of the present memo: and that propositions for increase should be made when necessary, through the Chief Magistrate's Office to Government.

6th. I approve highly of Lieutenant Abercrombie's propositions for employing Overseers from the Department of Publick Works, in the room of the present Overseers, who are steady, sober men, but without education or practice in the principles of Road-making, or keeping books of Establishment; but we must wait for fit opportunities to supply their place. When we have obtained them, the repairs of the Roads ought to be placed in their charge.

7th. It would be premature, I think, to appoint two additional Overseers for the Gowkhannas, or to hire the present Contractor as a procurer of Establishment. There ought, I think, to be no more difficulty in procuring an Establishment of Coolies than an Establishment of Chowkeydars, provided their pay is good, and faithfully given to them. On this point great attention will be necessary—every man's wages should be paid in presence of the Superintendent.

8th. I have to notice, that under the strong opinion expressed by Lieutenant Abercrombie, in which I entirely concur, the repairs to the Northern Division Overseer's house were not executed. It appeared to me that it would undoubtedly be the throwing away money to expend it on an attempted repair of the existing building, and subjecting the Overseer to risk of health by staying in it, or pecuniary loss by renting another house.

9th. The required number of publick Carts has nearly been made up, or they are in course of construction. The points for which the sanction of Government is solicited, are 1st, that we be authorized to maintain a fixed Establishment in lieu of the present contract, amounting to Company's Rupees 4,798 : 8 per month, as under :—

80 Horses with Syces, including feed,		at 16 per mensem, Co.'s Rs.	1,280	0	0
90 Bullocks with Drivers,	....	at 9	810	0	0
34 Mate Drivers, (additional)	....	at 1	34	0	0
80 Loading Coolies,	....	at 3-8	280	0	0
72 Mate Coolies,	....	at 4-8	324	0	0
380 Drain Coolies,	....	at 3-8	1,330	0	0
81 Ditto Boys,	....	at 2-8	202	8	0
4 Sirdar Mehters,	....	at 5	20	0	0
48 Mehters,	....	at 4	192	0	0
1 Sirdar Doome,	....	at 6	6	0	0
16 Doomes,	....	at 4	64	0	0
24 Peons,	....	at 5	120	0	0
4 Sirkars,	....	at 7	28	0	0
21 Bheesties,	....	at 4-8	108	0	0
			<hr/>		
			Total,.....	4,798	8 0

2d. That Estimate A. for alterations and additions to the Northern Gowkhanna, amounting to Rupees 7,364 : 15 : 4 — Estimate B. for certain alterations in the Southern Gowkhanna, amounting to Rupees 159 : 15 : 9—Estimate C. for constructing Sheds in the Northern Gowkhanna, amounting to Rupees 450 : 3 : 11, be sanctioned.

I have the honour to be, Sir,

Your most obedient Servant,

D. M ' FARLAN,

Chief Magistrate.

Calcutta Police Office, }
28th April, 1837. }

From D. M ' FARLAN, ESQ.,

Chief Magistrate.

TO THE SECRETARY OF THE MILITARY BOARD.

Calcutta Police Office, }
2d May, 1837. }

SIR,

I have the honour to submit, for transmission to the Governour of Bengal, through the Secretary in the Judicial Department, a Letter from myself on the subject of modifying the Establishment of the Conservancy Department, and two Papers drawn up by Lieutenant Abercrombie. accompanied by three Estimates and six Plans alluded to therein.

(True Copy)

EDWARD SAUNDERS,

Secretary Military Board.

From THE MILITARY BOARD.

To THE RIGHT HONOURABLE GEORGE, LORD AUCKLAND, G. C. B.

Governour of Bengal.

Fort William, 13 June, 1837.

MY LORD,

We have the honour to submit herewith copy of a Letter, dated 2nd ultimo, from the Chief Magistrate, and its accompaniments in original, among which is a Letter to the address of R. D. Mangles, Esq. Secretary to the Government of Bengal in the Judicial Department.

On the subject of improving the efficiency of the Conservancy Dept. Calcutta.

2nd. The object of the Chief Magistrate in forwarding these Papers through us, being to obtain our opinion on them, before submitting the question they involve to your Lordship, we have given the subject our attentive consideration, and have to report as follows.

3rd. The modification of the Conservancy Establishment is the principal object of this reference, it being thought desirable by the Chief Magistrate and Superintendent of Roads and Conservancy, to substitute a fixed and responsible Establishment for the scavenging of the Town, the Establishment for which, is now supplied through a Contractor, and greater economy as well as increased efficiency is anticipated from this arrangement.

4th. Our opinions generally are adverse to the entertainment of fixed Establishments, which have a constant tendency to increase, and even when found burdensome are extremely difficult to reduce. The employment of hired labourers therefore to meet a particular purpose is, we are of opinion, to be preferred whenever the duty admits of it. The work however for which the Establishment adverted to in the accompanying correspondence is to be maintained, is of a permanent character, and will afford constant employment to a considerable number of daily labourers; and a greater degree of controul may be exercised over men permanently entertained, than on those hired merely for the day; greater efficiency may also be expected from men familiarized to the work, than from strangers. Under these considerations, and the careful summary of the arguments on which the necessity of a change is based, presented by the Chief Magistrate, who has evidently given the subject great attention, we are disposed to coincide in the views entertained by him, and to recommend the retention of the Establishment he proposes.

5th. The first outlay consequent on the change of system, is estimated by Lieutenant Abercrombie at about 9,000 Rupees;—this part of the arrangement we understand, from the tenour of the 9th paragraph of the Chief Magistrate's Letter to Mr. Secretary Mangles, has been nearly effected; and that the sanction of Government is required to the entertainment of a monthly Establishment, amounting to Rupees 4,798 : 8 : 0; subject to future revision, which Establishment will suffice to perform a duty now executed by contract at a much heavier outlay.

6th. The Chief Magistrate forwards at the same time the following estimates.

Estimate No. 1. Book B, of 1837-38, Military Board Office, with Plans by Mr. Robert Sevestre, Executive Officer, of the probable expense of making the alterations and additions to the Northern Gowkhanna at Calcutta, amounting after correction to Company's Rupees 7,201 : 7 : 2.

Estimate No. 2. Book B, of 1837-38, Military Board Office, with Plans by Mr. Robert Sevestre, Executive Officer, of the probable expense of making the alterations to the Lower Southern Gowkhanna, Circular Road, for the reception of additional Conservancy Carts, and adding a Godown or Granary at Calcutta, amounting after correction to Company's Rupees 150 : 13 : 7.

Estimate No. 3. Book B, of 1837-38, Military Board Office, with a Plan by the same Officer, of the probable expense of constructing a shed for twenty watering Carts, one Fire Engine, and the Establishment consisting of twenty five persons attached to ditto, also a shed for fifteen horses and their syces, with coperal tiled double sloped roofs and supported on pillars, at Calcutta, amounting to Company's Rupees 450 : 3 : 11.

7th. The work provided for in these estimates appears necessary, and as the rates are moderate, we recommend that they be sanctioned.

8th. The proposal adverted to by the Chief Magistrate in his 6th paragraph, of employing subordinate functionaries from the Department of Publick Works, more especially those from the Department of Roads on Conservancy duties, we think good. The early habits of discipline and general steady character of men drafted from the Army, for duties of this nature, renders them, we think, generally more useful in such employments, than the candidates for similar situations generally attainable in Calcutta. The duty of Road-making and looking to the Cleaning of Drains, generally of earth, would be a principal part of their duty; some previous education for those branches of duty will at once be admitted as necessary;—it can no where be found in India except in this Department. The controuling Executive Officer would be, in this case, an Engineer of the Company's Service, and the men would be available in seasons of war.

9th. We would respectfully suggest that the question be referred to the Military Department of Government, with a view to the requisite sanction being obtained to the appointment of subordinate Officers of the Department of Publick Works, to do duty under Lieutenant Abercrombie in Calcutta.

We have the honour to be,

My Lord,

Your Lordship's most obedient and humble Servants,

D. M ' FARLAN.

A. IRVINE, *Major, M. M. B.*

T. M. TAYLOR, *Major, M. M. B.*

Z. 26.

Tolls.

From CAPTAIN JOHN THOMSON,

Superintendent of Canals.

To THE SECRETARY MUNICIPAL COMMITTEE.

Calcutta, 1st March, 1837.

SIR,

In compliance with the request contained in your Letter of the 25th instant, I have the honour to acquaint you, that the gross collection of Tolls on the two lines of Navigation mentioned in Act XXII, of 1836, has been as follows:—

1836—November,	15,705	3	3
December, . .	17,191	6	6
1837—January, . .	19,720	12	0
February, about,	23,000	0	0

These sums give an expected collection of 1,95,000 in the year, according to the proportion which the annual collection bears to the monthly.—The probable amount of the expenses of collection will be 5,000 Rs. in the year. I cannot give a return of Establishment for the collection only, as they have a variety of other duties, such as the collections for the lands of the Sunderbund and Circular Canals, and of the Ferries and Fisheries. In addition to the 5,000 Rs. before mentioned, the estimated annual expenditure for keeping up the Navigation is 25,000 Rs., including my staff salary of 6,000; and an additional sum of 5,000 Rs. is estimated for extraordinary repairs. The Canal Committee considered that the expenditure of the Government within the last fifteen years would be covered by a return of 60,000 a year, and 15,000 was considered a sufficient fund to effect further improvements; these added up make 1,10,000, to which sum I have no doubt but that the Government will reduce the Toll, although the present rate of Toll is on an average twenty per cent. less than the former regulated Toll; yet being strictly enforced, it bears harder than is desirable on such an important branch of industry, as the internal navigation of the country.

I have the honour to be,

Sir,

Your most obedient Servant,

J. THOMSON,

Superintendent of Canals.

Z. 27.

To ROSS D. MANGLES, ESQ.,

Secretary to the Government of Bengal.

SIR,

I have the honour to submit for the consideration of Government a statement of expense incurred in Lighting the Town, accompanied with a proposition for improving it, which has become practicable without increased expense, in consequence of a reduction in the rates introduced in the month of June last.

2nd. I am led to hope that the Government will be inclined to sanction an outlay, which has the convenience and benefit of the Town's people for its object, and which involves no addition to the expenditure heretofore made from the Government Funds.

3rd. That the benefit of the people will be consulted is plain, though I should have hesitated to recommend the expense, unless a proportionate saving could be shewn to have taken effect.

307 Lamps at 2 Rs. = 614, Sa. Rs. or Co's. Rs. 651: 15. 4th. The rate which was allowed by Government for Lighting the Town, from 1823 to 1831, was Sa. Rupees 2 per lamp, per month. In 1831, and subsequent years, the rate has been reduced, as shewn at foot, and the saving has been Co's. Rs. 6,963: 1: 6.

5th. That the efficiency of the Lighting has not been impaired, I believe may be safely affirmed. Positive orders are issued to the Police rounds to report the failure of lamps at night, and I believe the practice is in that respect perfect enough.

6th. What I now solicit is, that a sum of Rupees 4,550, out of former savings, may be granted for the purpose of erecting lamps where desirable (the annexed list is tested by Captain Birch) and a monthly increase of expense of 188: 7: 6.

7th. The rate of Lighting must vary with the price of oil;—the above expense provides for such increased rate as may fairly be expected to occur.

8th. If the principle of appropriating the savings in the manner suggested be approved of, detailed estimates of the expense of putting up the proposed number of additional lamps can be submitted to Government through the Military Board.

I have the honour to be, Sir,

Your most obedient Servant,

(Signed) D. M'FARLAN, *Chief Magistrate.*

Calcutta Police Office.
10th November, 1836.

	Sa. Rs.	Sa. Rs.
April, 1831, rate reduced from.	2 0 0	to 1 14 0
March, 1832, Ditto Ditto,	1 14 0	to 1 11 0
15th June, 1836, Ditto, Ditto,	1 11 0	to Co's. 1 2 6
307 Lamps from 1st April, 1831, to the 29th February, 1832; being 11 months at 2 annas per month,		Sa. Rs. 422 2 0
Ditto from 1st March, 1832, to the 15th June, 1836, being 4 years and 2½ month at 5 annas per lamp, per month,		4,844 13 6
		<hr/> Sicca Rupees, 5,266 15 6
		Company's Rupees, 5,618 1 6
307 Lamps from 18th June to 31st October, 1836, 4½ months at 15 annas 7 pie per lamp, per month,		1,345 0 0
		Company's Rupees, 6,963 1 6

Z. 27.

To D. M'FARLAN, ESQ.

Judicial Department.

Chief Magistrate of Calcutta.

Sir,

I am directed to acknowledge the receipt of your Letter dated the 10th instant, relative to the Lighting of the Town of Calcutta, and to inform you in reply, that the Right Honourable the Governour of Bengal is not satisfied that the alleged saving of Company's Rupees 6,963 : 1 : 6, which appears to be nothing more than the aggregate of reduced expenditure, in consequence probably of a fall in the price of oil since April, 1831, can properly be regarded as a fund from which the charge of erecting and maintaining additional lamps may be defrayed "without increased expense."

2. Further, it is obvious that if the price of oil were to rise, the present rate of cost per lamp could not be maintained. See Paragraph 7. This contingency you state has been provided for; if so, the existing rate of Co's. Rs. 1 : 2 : 6 per lamp, at which you calculate the increase, must be too high, but this you do not state; nor, unless there be a contract, of which your Letter conveys no hint, does the Governour suppose that you would allow a charge, at present needlessly high, to stand.

3. Under these circumstances, his Lordship, although he is desirous of seeing means adopted for improving and for extending the means of lighting the Town of Calcutta, is disposed to await the Report of the Committee of Municipal Improvement, before he sanctions the immediate outlay of Rupees 4,550, and the additional monthly charge of Rupees 188 : 7 : 6, proposed by you.

I am, Sir,

Your obedient humble Servant,

(Signed)

ROSS D. MANGLES,

FORT WILLIAM,

Secretary to the Government of Bengal.

20th December, 1836.

NAMES OF STREETS.							No. Lamps.	Total.
<i>Strand Road.</i>								
As far as Radamadub Banarjee's Ghaut, in places in which Guns have been sunk,							17	
Ahceeretollah Ghaut,							2	
<i>Upper North Division.</i>								
Chitpore Road,	Rajah Nobkissen's street,	2						
	Doorgachurn Mitter's street,	2						
	Rajah Goodoss' street,	2						
	Manicktollah street,	2						
	Baranussy Ghose's street,	2						
	Mooktaram Baboo's street,	2						
	Mutchooa Bazar street,	1						
Rajah Nobkissen's street, ..	Saum Bazar street,	2						
Rajah Goodoss' street, ...	Manicktollah street,	2						
Dum-Dum Bridge,	East end, Saum Bazar street,	2						
Chitpore Road,	Soba Bazar street,	2						
	Ahceeretollah street,	2						
	Neemtollah street,	2						
	Pattooreeah Ghaut street,	2						
	Rutton Sircar's Garden street,	2						
	Baunstollah street,	2						
Chitpore Road,	Burtollah street,	1						
	Cotton street,	1						
Burra Bazar,	Cotton street,	1						
Durmahattah street,	Cotton street,	1						
	Baunstollah street,	2						
	Rutton Sircar's Garden Street,	2						
	Pattooreeah Ghaut street,	2						
	Nimtollah street,	2						
Strand Road,	Hautkollah street,	2						
Soba Bazar street,	Ditto ditto,	2						
<i>Lower North Division.</i>								
Cotton street,	Durmahatta street,	1						
Ditto ditto,	Chitpore Road,	1						
Mutchooa Bazar Road, ...	Ditto ditto,	1						
New Cullootollah,	Chitpore Road,	2						
Ditto ditto,	College street,	2						
Moorgehuttah street,	Chitpore Road,	2						
Ditto ditto,	Old China Bazar street,	2						
Durmahatta street	Jackson's Ghaut street,	2						
Old China Bazar street, ...	Ditto ditto,	2						
Boituckannah Road,	Circular Road,	1						
Ditto ditto,	College street,	1						
College street,	Bow Bazar,	1						
Ditto ditto,	Mutchooa Bazar,	2						
Chunam Gully,	Bow Bazar,	2						
Ditto ditto,	New Collootollah,	1						
Rada Bazar street,	Old China Bazar street,	2						
Moorgehuttah street, ...	Portuguese Church Lane,	1						
Armenian street,	Ditto ditto,	1						
Moorgehuttah street, ...	Doomtollah street,	1						
Ditto ditto,	Omrahtollah,	1						
Bow Bazar Road,	Bow Bazar Lane,	2						
Swallow Lane,	New China Bazar,	1						
Carried forward,								

Z. 27.

List of Sites for the proposed additional Lamps.—Continued.

NAMES OF STREETS.		No. Lamps.	Total.
<i>Upper South Division.</i>			
	Brought over,		98
Chaudney Choke,	Dhurmahatta Road, two corners,	2	
St. James' street,	Ditto ditto,	1	
Ditto ditto,	Bow Bazar street,	2	
Dhurumtollah Road,	Circular,	1	
Wellington street,	Bow Bazar street,	2	
Bow Bazar Lane,	Loll Bazar Road,	1	
Hiddaram Banarjee's Lane,	St. James' street,	1	
Mudden Dutt's street,	Bow Bazar Road,	1	
Kinderdines Lane,	Ditto ditto,	1	
Creek Row,	Circular Road,	1	13
<i>Lower South Division.</i>			
Dhurumtollah Road,	Circular Road,	1	
South-end, Chowringhee Road,	.. ..	2	
Theatre street,	Chowringhee Road,	2	
Ditto ditto,	Camac street,	2	
Harrington street,	Ditto ditto,	2	
Ditto ditto,	Chowringhee Road,	2	
Middleton street,	Ditto ditto,	2	
Ditto ditto,	Camac street,	2	
Kyd street,	Free School street,	1	
Ditto ditto,	Chowringhee Road,	1	
Sudder street,	Ditto ditto,	1	
Ditto ditto,	Free School street,	1	
Rajchunder's Road,	Chowringhee Road,	2	
South Colingah street, ...	Free School street,	2	
Ditto ditto,	Circular Road,	2	
Elliot Road,	Circular Road,	2	
Ditto	Ditto South Colingah street,	2	
Park street,	Circular Road,	2	
Ditto ditto,	Camac street,	2	
Circular Road,	Ditto ditto,	2	
Russel street,	Park street,	2	
Ditto ditto,	Middleton street,	2	
Middleton Row,	Park street,	2	
Ditto ditto,	South-end,	1	
Ditto ditto,	Camac street,	1	
Jora Talao street,	Free School street,	1	
Ditto ditto,	Ditto ditto,	1	
Colinga Bazar street, ...	Jaun Bazar street,	1	
Ditto ditto,	Wellesley street,	1	
Royd street,	Free School street,	1	
Ditto ditto,	Elliot's Road,	1	
Chowringhee Lane,	Kyd street,	1	
Ditto ditto,	Sudder street,	1	
Gorustan Lane,	Elliot's Road,	1	52
Total Lamps,			163

(Signed)

W. ABERCROMBIE,

Superintendent Conservancy.

Z. 28.

*Remarks on the Office of Coroner of Calcutta, for the Municipal Committee—
(with reference to Evidence, No. 71.)*

In addition to the corrections which I have made in the Notes taken by the Committee, I would observe, that I do
Mode of getting a Jury. not find so much difficulty now in obtaining Jurors, as prior to the employment of East Indians as

* Previous to my assuming the office, no presentments of defaulters took place—and it was sometime before I succeeded in establishing the practice on its proper and legal foundation. I was more than once told that I could proceed only by indictment, but on a representation, the date of which I forget, the matter was referred to Sir John Frauks, who, I was informed, after some research satisfied himself and the Bench of the right of the Coroner to present defaulters, and I got the form of presentment settled by Mr. Turton. In England, under Mr. Peel's Act, the Coroners have themselves the power of fining to the extent £5, but I am far from desiring a similar power. I would much rather it should remain where it is. There have been 16 cases during the five years I am remarking upon, when I issued Warrants for Jurors but could not obtain a sufficient number to hold inquest.

moning a Jury duly filled up with 36 names instead of 24. The Summonses also are filled up as far as they can be ; that is, they are directed to the parties, so that the instant I decide on holding an inquest, nothing is required to be done but for the Constable to fill up the Summons with the name of the deceased, and the time and place fixed for the inquest, and to sign the same. This preparation is necessary, owing to its being imperative in this climate to dispose of the body as soon as possible, and of course some time is required to allow of the Constables serving the Summons.

Next, I myself keep the Roster, and select the Jurors to be summoned regularly as their time comes round, which now seldom takes place under 16 months ; but this course of proceeding is not merely irregular, I hold it to be illegal. I found the practice to obtain, when I became Coroner ; and although I have occasionally mentioned its illegality to Mr. M'Farlan and to Captains Steel and Birch, I have not taken any steps to effect a change ; because, in the first place, no practical inconvenience has arisen from it ; and, next, I did not like to urge a change whereby I should myself be relieved from some trouble.

The duty of the Coroner when he determines on holding an inquest, is merely to issue his Warrant to the proper officer, which in England is the Beadle of the Parish where the body is lying, directing him to summon 24 good and lawful men. He again issues a sub-precept to the Beadles of neighbouring Parishes, in the same county of course. The Beadles keep the Rosters and select the Jury—in fact, they do for the Coroner in this matter, precisely what the Sheriff does for the Judges in the Supreme Court ; and it is as much a legal anomaly for the Coroner to select his Jurors as it would be for the Judges of the Court of Oyer and Terminer to select theirs. In England it would not be allowed ; for cases occur there, wherein if it was so the Coroner would be exposed to much vituperation. If the Coroner on the occasion of the so called Manchester Massacre had selected the Jury, in addition to the abuse heaped on him as having been partial as a Judge, he would have been taxed also with packing his Jury.

There is little chance here of any occasion arising wherein the Coroner would be obnoxious to such a charge, yet the present practice is clearly illegal ; but as the change would operate to reduction of trouble on my own part, I leave it to be determined by Government, according to the recommendation of the Municipal Committee, whether the present practice shall continue or not. Certainly if paid only by fees for every inquest held, the Coroner will, as a matter of course, seek to be relieved from any duty which does not properly belong to him, and especially from such as may be illegal.

The conveniences of the present practice are, that the Coroner can himself feel assured that impartiality is exercised in selecting the Jurors, and he can then more readily present defaulters ; but under any event I would suggest, that it would very much conduce to the more ready assembly of Jurors, if the Deputy Superintendent of Police were enjoined on receiving the Warrant of the Coroner—which I think should be directed to him, and which, as I have said before, is always made out immediately after an inquest has been summoned on the preceding Warrant—to desire the Constables (if possible those who are to execute the Warrant) to ascertain in the intermediate time the existence, residence, &c. of the parties to be summoned ; communicating to the Coroner, if the selection still remained with him, whenever he found a party intended to be summoned to be dead, not to be found, or who for any reason

ought not to be summoned, in order that some other person might be substituted. I once thought that it might also be expedient to warn parties that they were next for this duty ; but on consideration, I feared that the practice of endeavouring to escape the service of the Summons would be increased. However if this suggestion is adopted, I feel satisfied that not the smallest difficulty would occur in getting a Jury, even on a holiday ; and that the lists

Why Natives hitherto not summoned.

would be much amended. I may as well here also note, that I have hitherto not summoned Native Jurors, owing to the difficulty of getting at them in time, their places of residence only being noted in the published lists, and not their offices. This Sir Edward Ryan undertook to have done, and I shall then be most happy, on every account, to avail myself of the assistance of Native Jurors.

All these matters would obviate any necessity for reducing the number of Jurors, which was hinted at in the Committee, and which to my view would be a violation of a far more important legal principle, than that which I threw out only as a suggestion, viz., that it might be discretionary with the Coroner in this country to dispense with the view by the Jury, and that when he deemed it right to exercise such discretion, a view should be taken by the Coroner, the Superintendent of Police, and the Police Surgeon, who should draw up a minute and particular account of all those matters which furnish the result of the view to a Jury, this being signed by them and sworn to, before the inquest, by the Superintendent and Surgeon ; the Coroner's oath of office being sufficient in his case, might be admitted as evidence of the view. Of course the Coroner would exercise this discretion under responsibility to the Supreme Court, in each case. I may here add, that I sincerely believe the effect of the inquiries by the Coroner on the minds of the Native population is very good. They see besides the Coroner, twelve gentlemen repairing to the spot, and as eagerly inquiring into the death of a Native beggar, as of an European of rank. There is generally a large crowd where the body is lying, and the presence of so many Europeans is to them a sufficient guarantee against any, whether well or ill founded, apprehension of justice not being done by the Native Police.

With reference to question No. 21, I did hold an inquest on both occasions of the Malay prisoners dying. The first was named Oombeah ; he died at the Police Hospital on the 22d November last. The verdict was " The deceased died a natural death from low typhus fever." There was not a word breathed of suspicion of his having been poisoned. The evidence of the Police Surgeon deposed, that the deceased had been under his own care in the Police Hospital from the 14th to the 22d November, when he died. The lungs were found in a state of softening and great congestion, the liver and spleen were easily broken up, and also much congested, the heart unusually large, and the right ventricle full of dark blood, stomach and intestines very vascular and contained a great quantity of thick dark green-looking matter. Mr. Bain had no hesitation in giving it as his opinion, that he died from a severe attack of low typhus fever. Achee, a fellow prisoner, deposed, that the moment he complained he was removed to the Hospital, and was satisfied that he died by the act of God, and not from any injury done to him while in custody. The evidence, in the case of Waterho, who died in Jail, by Mr. Raleigh, was, that the man was placed in his care on the 19th of November for fever and dysentery, and died on the 29th. Two of his fellow prisoners were satisfied that he died entirely by the act of God.

I have stated that I have derived great benefit and assistance from the present Police establishment, and that the Thannadar establishment is much more trustworthy now than under the former system ; but I would observe, that I consider it should be laid down as one of the positive and indispensable duties of the Deputy Superintendent of Police, that the warrant for summoning the Jury being directed to him, he should be present *at the commencement of every inquest*, to return the warrant. The Coroner knowing the demands on his time, would not unnecessarily detain him. The particular Police Constable or Serjeant who is attached to the Division in which the body lies, should also be in attendance during the whole inquest.

Touching acting for the Sheriff when he is a party, I would observe that the question of right was mooted by me some years ago in a case when the Sheriff was a party, and the Writ, as was then the practice, was directed to the Under Sheriff. This practice arose out of the clause in the Charter of Justice, which directs the Judges to choose a fit person in such cases ; but at that time there was no legal Coroner, and hence the necessity for that clause in the Charter of Justice. Subsequently, however, under the Act 33, Geo. III. Chap. 52, Sec. 157, Coroners were appointed who " shall and may, by force of this " Act, have, do, execute, perform, and exercise the like powers, authorities, and jurisdictions, within the Presidency " or Settlement, for which they shall be so respectively nominated and appointed, as by law may be had, done.

"executed, performed, or exercised by Coroners elected for any county or place in England, and not otherwise, or "in any other manner." And it certainly appeared to me, that under this Section, Coroners in India, as a matter of course, became legally the Officer of the Court in the place of the Sheriff, he being a party. It was however ruled otherwise by Sir Francis Maenaghten and Sir Anthony Buller; but a very short time afterwards, in a case when the Deputy Sheriff was a party, Sir Francis Maenaghten, on application as to whom the writ should be directed, said, that it was advisable in such cases to have some one well known Publick officer, and no one was better than the Coroner, and he ordered that all Writs in such cases should be directed to that officer, and he concluded by desiring that the Writ be directed to "C. B. Greenlaw, Coroner of Calcutta." Now I should submit that the name had better be omitted, for if the office is alone given, the process would go on notwithstanding the occurrence of a vacancy. I would submit, however, that it should be again considered whether the Act above quoted does not vest in the Coroners in India the same constituted right to act for the Sheriff as obtains at home, and if it does, that it should be so notified. On the other hand, if it should be ruled that it does not, but that the Coroner should be appointed under the discretion vested by the Charter in the Judges, that it should form one of the rules of Court, and be printed and promulgated with the other rules; and this may perhaps be considered the more expedient, in that ere long I imagine Juries will be allowed in civil cases. I would also observe, that the bond given by the Jailer to the Sheriff should include the Coroner; for otherwise this latter officer would be in an awkward predicament in the event of an escape.

I may observe that this acting for the Sheriff is not a source of emolument worth notice. I have not received above 600 Rs. during the time I have been Coroner.

Touching the conveyance of Jurors as well to my office as to the spot where the body may be lying, and back.

Conveyance for Jurors. many Jurors come on foot, and the extent of my jurisdiction requiring sometimes four miles to be passed over to get at the body, even conveyance in palanquin* occasions great delay and inconvenience, especially in the hot weather and rains. Therefore it is that I use my carriages, which, aided by a buggy or two, or palanquin carriage of the Jurors, are sufficient to carry

* Note. Government allow Palanquin hire when it is claimed by Jurors.

the Jury speedily to and from the body. It will be for Government to determine whether they will authorize any contingent charge for hired carriage conveyance. At all events if the Coroner is paid by fees he cannot be expected to be at the expense himself; and the Jurors will, as they used to do before I adopted my present practice, complain of "being dragged through the sun seven and eight miles in a palanquin," sometimes in the middle of the day.

I now beg to refer to the accompanying Statement exhibiting the details of the business during the years 1832 to 1836† inclusive, on one or two of which a few remarks may be necessary.

Detailed Statements of Inquests from 1832 to 1836.

† Note. I have taken these years because I began to prepare the statements in 1837.

With respect to those marked A, Nos. 1 to 5, containing the Inquests for the last five years, and No. 6, an Abstract thereof. I would observe that the time occupied, is that from the swearing of the Jury till their discharge, but the time of the Coroner is previously occupied in preparing the warrant for summoning the Jury, and sometimes in inquiring into the facts of the case, in order to the better conducting the inquiry; and after the close in filling up the depositions; and in cases going before the Supreme Court, in binding over the witnesses. The time of the Coroner is further occupied in attending the Sessions, and in summarily investigating sudden and unusual deaths, and deaths in jail, as noted in Statement B, Nos. 1 to 6, on which I shall have to make some remarks.

Query 6, Evidence, No. 71, page, clxxvi.

Reference was made in the Committee to the apprehended frequency of secret poisoning, and I mentioned a case which lately occurred on my own premises, which sufficiently illustrated the absolute necessity of the greatest attention being paid to all cases of sudden deaths, especially with cholera appearances.

Secret poisoning.

The deceased was the Moonshee of my Court, and had been so since August, 1806. He was above 70 years of age, and lived on my premises. I always understood that he was very much respected as a Moolla by all my Mussulman servants, although he was penurious in the extreme. He was always ailing more or less from old age, and therefore when on retiring for the night, I was informed that he was unwell, after having partaken of some sweetmeats in common with the rest of the servants, I thought it arose solely from the palling nature of the sweetmeats; he had therefore some tea and liquid essence of ginger sent to him.

In the morning when I went to see him, I perceived he was dying. He was then speechless, and died about half past eight. I had not the most distant suspicion, notwithstanding that I heard he had declared that it was something in the sweetmeats that had made him ill; but I had the body opened, and I have been seldom more surprised than when I received a note from the Police Surgeon, stating that he had found a large quantity of arsenic in his stomach.

The only evidence I could get, went to this, viz. that one of my kitmutgars who had entered my service, a boy of 17 or 18, and been with me seven years, had made a vow if a certain sick calf recovered, that he would distribute sweetmeats among the servants; accordingly he gave another kitmutgar some pice to bring the sweetmeats, and having received them, he called the Moonshee into the bottleconnah to perform some religious ceremony over them, after which he said, "there is a large one for you, eat it, and here is a small one for your nephew," a lad who lived with him. The Moonshee eat the greater part of his before he left the bottleconnah; when he went to his own place, he said to his nephew, "here, Hingun has given me a large sweetmeat, I do not want it all, take what remains and eat now, and keep your own till some other time." The boy accordingly ate the remains of the large ball, and both were sick;—not a single clue beyond this could I get, except that the sweetmeats taken to Hingun by the other kitmutgar were all of the same size.

The difficulty was first to establish by evidence that the arsenic was in the large ball; and, secondly, that it had been given by Hingun. This latter however he admitted, but standing as he did, I could not ask him how the ball became enlarged.

I could not rule that arsenic was in the ball, notwithstanding both had eaten of it and both were sick, because first the boy was very slightly sick, and might have been so from sheer sympathy. If it had happened that he had vomited into a place separate from his uncle and arsenic had been there detected, it would have been different; for although arsenic was discovered in a flower pot into which both had vomited, it was impossible to say that any had come from the boy.

I handed the case over to Mr. M'Farlan, with the two kitmutgars, but regret that nothing could be made of it. The kitmutgar Hingun bore with me a most excellent character in every respect, and I am altogether in doubt as to the criminal. I believe the motive to have been, to benefit some way or other by the vacancy occasioned in the office. I obviated this by introducing an entire stranger.

Another case shewing how poisoning by arsenic may be mistaken for cholera, was that of Mr. Berry—Inquisition No. 15 of 1832. He took his tiffin of bread butter and cheese, in the form of a sandwich, at his office, viz. the office of his master, the late Mr. Ronald, Attorney, and shortly after was taken very ill. Dr. Jackson attended him immediately, and pronounced him attacked by cholera. He was removed home and attended by his family Surgeon, the late Dr. Vos. I will not affirm that Dr. Vos, held the case to be cholera towards its close; but certainly he did so for some time. However the body was interred in the Roman Catholic Burial Ground; but the next day some grains of arsenic being found on the rattan mat near his desk, Mr. Ronald brought them to me. It was Saturday; but I fortunately had an adjourned inquest for four o'clock that day, and I caused the body to be disinterred, when the fact of death having arose from arsenic was clear. The perpetrator here also could not be discovered; though strong suspicions rested on certain parties.

I have been particular in requiring generally, that the bodies of persons for whom permissive warrants to bury without an Inquest being held, are required, unless the cause of death is clear, should be opened and certificate furnished by the Police Surgeon; I do not therefore think that cases of poisoning by mineral poison do frequently occur without detection. By vegetable poisons I fear they may do so, owing to the extreme difficulty of detection; and unfortunately both kinds of poison can be procured in all parts of Calcutta, at the cheapest cost—against this there is no guarding.

The next description of case to which I would refer, is the exposure of infants, and infanticide. At one time, and up to about 1821 or 1825, this was very frequent; but from the mother not being forthcoming, and no evidence how the child became exposed being procurable, although several inquests were held, I could not get one verdict against any person. Of late however I have scarcely a report in a year of such a case. I really believe the last is that referred to in the statement of inquest No. 11, of 1832. What has led to this absence of exposure of infants, I cannot say; only six instances, including the one just mentioned, have occurred during the five years in question. Certainly when it obtained frequently, I did exert myself to the utmost to get at a party, and perhaps this, together with the increased vigilance of the Police, may have been the cause of fewer cases being reported; but whether the crime of exposing living infants itself has been diminished, is quite another question. Many of these exposed infants were either born dead, or had died shortly after birth, and the parents have from poverty and want of feeling,

thrown the body into a ditch or drain ; but there can be no doubt that many were wilfully exposed to perish, with a view to screen the parties from disgrace especially in cases where the mother may have been part of the family of Natives of respectability, whether of the family itself or servant. The case above alluded to, was clearly a case of wilful exposure ; the child was quite healthy and was found alive, and there were strong suspicions as to the house whence the child had been brought ; but with all the active aid of Mr. McCann zealously exercised, I could get no tangible clue. I confess I fear that the practice may be secretly carried on.

The particulars in respect to violence done by others, may be seen on reference to statement A, No. 6. They amount in all to 34 ; besides, there were six cases in which no inquest was held, in consequence of not being able to procure a jury. Of the 34 there were 27 verdicts of wilful murder, of which 8 were against person or persons unknown. Of the parties charged on the remaining 19 inquisitions, eleven were convicted and executed, one of them having killed three persons ; three were convicted of manslaughter ; and three acquitted, one of them on the ground of insanity. There were five inquisitions for manslaughter ; four of the parties charged were convicted, and one acquitted ; and there were two inquisitions of homicide by insanes.

I would now refer generally to the cases* where permissive warrants to bury are granted without an inquest. The body of no person found dead, or who may have died suddenly, or have marks of violence on the body, or under any circumstances of suspicion however trifling, can legally be disposed of, without the intervention of the Coroner.

* Vide statement B, Nos. 1 to 6.

Permissive warrants to bury without inquest

The circumstances attending the death, when the application is made for such permissive warrant, as far as they can be ascertained, are communicated to the Coroner ; at home by the constituted Publick officers of the parish, the Vicar, or Churchwardens, and sometimes by the local Magistrates ; of course the more respectable the testimony, the more the Coroner is bound to grant the warrant without an inquest ; and this he does without going to the spot, which may be twenty or thirty miles from his residence—of course he exercises this discretion under great responsibility.

Prior to the change in the Police system, I myself personally went and saw every dead body reported to me. I went with my interpreter and made inquiries on the spot. I do not consider this as my actual duty ; but at that time, unless I did so, I could not get that immediate information of the circumstances which is necessary to guide me in this country, whether or not to hold an inquest. Sometime after the change in the Police system in communication with Mr. M'Farlan, the present practice, founded on that at home, was introduced. I am particular in requiring certificate from the Police Surgeon in most cases, and I have required that the Police Constable or Serjeant of the Division shall inquire of the circumstances on the spot. I am not aware whether this is done in every case ; I think it certainly ought to be done. It is impossible to depend on the Native Police, in all such cases. I will state one that occurred before the change in the Police.

On one Sunday morning I got notice of a child having been found drowned. The Thannadar endeavoured to persuade me that there was no occasion for me to go to the spot. I did not suspect any thing on this account, as the Thannadars frequently did the same, solely with a view, as they thought, to save me trouble. When I came to the tank, I asked as usual from what part of the tank the child had been taken. From the place pointed out, I instantly saw that the child could not by any possibility have got into the tank by accident, but must have been thrown from the roof of an adjoining house. I had a long inquiry. It turned out that the mother of the child was married to a fatuous man, and the reputed father in the neighbourhood, was the son of the Thannadar who had endeavoured to dissuade me from going to the spot ; he was also Naib of the Division. I could however get no good evidence as to the guilty party. The mother was I think entirely innocent ; she had left her child, an helpless infant, asleep in a room upstairs while she went down to take her dinner ; when she went up, the child was missing. It was after dusk, and there was a staircase leading from the room in which the child lay to the roof of the house, on reaching which, and passing over the roof of two adjoining houses, the child could be easily thrown into that part of the tank from whence it was taken. Mr. Hogg, subsequently took the case in hand but could make nothing of it.

The next description of case to which I would refer, is that of the accidental drowning of children. This is by no means unfrequent (there having been twenty-three in the five years), though I think not so much as it was once. It arises from the exposed state of the tanks, and the natural disposition of children in this country, from the force of example, to be dabbling in water. It occurs almost entirely among the poorer classes, who being occupied in their business, and being unable to keep a servant to look after their children, they wander about and sometimes fall into, and at others voluntarily enter, tanks, and are drowned. I know no remedy for

this; the Chinese who live on the water attach dry gourds to their children, which keep them afloat, if they accidentally fall overboard, but here of course no Native anticipates that his child will ever need such a security.

The next case is that of children being accidentally burnt. This occurs generally during the cold weather, when the children cumber over a wood or straw fire, for its warmth, and their clothes become ignited. Children accidentally burnt. Of course no remedy but care on the part of the parents can be applied here. The next case is one of regular occurrence during the hot weather, viz. parties suffocated in consequence of descending into dry, or nearly dry, wells, in ignorance of the effects. Only two cases are specially noticed in the statements as having arisen from this cause; but out of the thirty cases of adults drowned in wells or tanks, a great part arose from descending incautiously into dry wells. This might be in a great measure guarded against, by a notice being stuck up at all such wells, warning people against going down during the hot weather, and the caution might be tom-tomed, throughout the various Thannah Divisions.

Another case of almost regular periodical occurrence, is death arising from the fall of old walls, houses, and huts. Death by fall of old walls, &c. Fourteen instances of this have occurred during the five years. It occurs chiefly during the rains, when walls and houses, cemented alone with mud, give way, and very frequently, either bury people in their own ruins, or by falling on the lightly constructed huts of the poorer class of Natives, equally smother and destroy them. Sometimes the thatched roofs of the huts themselves, saturated with rain, give way, and falling directly down smother the inmates.

With regard to these casualties, much I think might be done to prevent them. No old dangerous wall or house should be allowed to remain. Parties who will not repair or remove such nuisances are liable to indictment, and they ought to be indicted. I have frequently brought this to the notice of Mr. M'Farlan and the Superintendent of Police, and I have been informed that the Thannadars of the several Divisions have orders, and their Chowkeydars under them, to give notice of every dangerous or suspicious looking place to the Police, on receiving which, an inspection is made, and proceedings had to abate the nuisance; but I consider that this and some other matters should be made part and parcel of a Regulation—that they should not merely be conveyed verbally to the Thannadars, but should be hung up in the Thannahs, and notified for general information, European as well as Native. No pukka house or wall ought to be allowed to be erected with mud only, or with any thing but sufficient cement. If people were obliged to give notice when they were about to build, an appointed inspector or surveyor might examine from time to time the security. In England individuals in Towns are obliged to have their houses securely built, and in London to go to the expense of party walls. Of course here among the lower classes any additional expense, however small, is of importance; but the pukka houses and walls of many sufficiently rich Natives are run up with mud, and after all, human life is too valuable to be periodically sacrificed for the sake of saving a few Rupees.

The next case to which I see reason to refer, is that of persons found dead in a state of destitution. These amount to thirty-five during the five years. These cases have been greatly reduced within the Town, by the Establishment of the Gurnhatta Hospital, to which place many found dying in the Streets are removed, who would otherwise be taken to the Native Hospital in the Durruntollah; some moreover are doubtless saved by the Establishment of the former Hospital; and on the whole, the cases of persons found dead in a state of destitution are much reduced in number.

Deaths from fires. Deaths from fires. Deaths from fires. happens to old decrepid people, who cannot move speedily out of their huts. I never could trace the commencement of a fire.

It is generally supposed that the accidents from being knocked down by buggies or other carriages, run-away horses, &c. are very numerous. Only twenty-two however have occurred during the five years, and only nine of them were subjected to inquiry, owing in the other cases to the parties escaping, and leaving no trace behind them. These accidents do not so much arise out of carelessness in the driver, as in the Native pedestrians, who seldom give any consideration to passing carriages, even when meeting them. The accidents of course are more frequent from their being no foot paths, and pedestrians, carriages, and equestrians, all being mixed together.

There have been twenty-nine cases during the five years, of parties meeting their deaths by falling from roofs of houses, terraces, scaffoldings, &c.; some of these have arisen from intoxication.

The last case of death, except of those dying in Jail, of which I shall speak presently, requiring the intervention of the Coroner, which it is necessary to notice, is that of self-destruction. Self-destruction. The number of these cases during the five years was forty-nine, on eleven of which inquests were held, and in one case an inquest

would have been held, but there was a default of Jury. Out of the thirty-eight cases in which no inquest was held, twenty-two were women, and sixteen men. Twenty of the women hung themselves, the causes being generally, jealousy, quarrel with their husbands or other relatives, and pain, and illness. Two poisoned themselves, one an European woman, suffering greatly from pecuniary distress. The causes in regard to the men, are chiefly long illness, and derangement of mind. Of the sixteen males, thirteen hung themselves, one strangled himself, one cut his throat, and one, a lad of 16½ years of age, took poison, and acknowledged it before his death. He did it from distress of mind at not having been brought up to any business, whereby he might maintain himself. In the case of parties found hanging, it has been supposed that it may happen that they have been previously killed either by strangulation or other means, and afterwards suspended. I consider it however scarcely possible that such a thing could occur without detection. In such cases it most frequently happens, that the parties are not wholly suspended—that their feet touch the ground owing to the fall; and I have seen a clear case of self-destruction effected, by a party kneeling on the ground and placing his head in the bight of a rope, suffer it to press behind the ear and cause strangulation. Only one case of a party having been previously killed and subsequently suspended, has occurred during my period of office. It was that of a young married woman. The instant I went into the room it was quite apparent to me that she had not hung herself; for the height from whence the rope was round her neck to the place where it was fastened was not five feet, while her toes were some distance from the ground—it was evident that if she had hung herself, there must have been a sufficient fall of rope to have brought her feet in contact with the ground. On examining her, there was a clear mark running *even* round her neck below that occasioned by the suspension, this latter indeed being scarcely perceptible, while the former was very plain;—there was no direct evidence, but the circumstantial evidence clearly established, that no person could have done it but the husband, and a verdict of wilful murder was returned against him. There was however great difficulty in bringing this matter home to the satisfaction of the petty Jury—the view here was of great moment—the man was acquitted.

I may here observe, that in no case of a party found hanging, strangled, or poisoned, is a warrant granted to bury without inquest, except on the most clear and satisfactory proof that it was the voluntary act of the parties themselves, viz. doors and windows fastened inside, parties seen a short time before, and found in situations shewing it to be impossible for any other person to have done it, &c. &c. Certainly, in strictness, an inquest ought to be held on every body so found, but I have followed the example of my predecessors in exercising a discretion in such cases, because the population so far exceeds the Jury List, that if an inquest was held in every case when it would be held at home, the Jurors would have little else to do but to attend inquests. The eleven cases in which inquests were held, referred all to men. Five hung themselves, two under derangement of mind, one owing to pains in his body, and there was no evidence to shew the state of mind of the other two. Three out of the eleven cut their throats, two of them after committing murder, and the other in a state of derangement. Of the remaining three, two strangled themselves in unsound state of mind, and the other poisoned himself by means of opium and orpiment of arsenic, under the influence of feelings arising from his having been disgraced.

Touching deaths in Jail, strictly, an inquest ought to be held in every case; and here again, following the practice Deaths in Jail. which I found to obtain, I take on myself heavy responsibility in issuing a permissive warrant to bury without an inquest; but this I never do without going myself to the Jail, with my interpreter, and satisfying myself by the testimony of the fellow prisoners of the deceased, that no cause of complaint exists. I always however hold inquests when there is the slightest disinclination to bear testimony to there being no cause of complaint; and I must, in justice to the several Jailers who have had charge during the seventeen years I have been Coroner, say, that it is impossible for such unpleasant duties to be better conducted than they are in the Calcutta Jail.

It will be seen from the above, that the time devoted by the Coroner to the duties of his office, is not confined to that during which he is holding inquests, nor his responsibility to the cases involved on those inquests. Besides these latter, Statement B, No. 6, shews an annual average of 90 permissive warrants granted to bury without inquests, in every individual case of which number he is responsible to the Supreme Court, and liable, under the 6th Sec. Act. 9. Geo. IV. C. 74: to summary punishment, if in any one case he grants this permissive warrant, when it ought not to have been granted; and on a full review of the duties and responsibilities, I think the Committee will consider that this Officer is not overpaid, and that it is expedient that the Coroner should continue to be paid under a fixed salary, rather than by fees on every inquest held.

Time devoted by Coroner to the duties of his Office.
Office not overpaid.

Under the present system the Coroner has no interest in multiplying inquests, yet he has a deep interest in holding one in every case when it is necessary, namely the maintenance of his character. Objection to his being remunerated by fees. Besides which, there is a check on him in this latter particular, in the persons of the Chief Magistrate and Superintendent of Police, who would not fail to complain of any malversation in this particular; hence there occurs under the present arrangement a minimum of inquests, while the purposes of Justice are fully answered.

On the other hand, if paid by fees, it would be the interest of the Coroner to multiply inquests, to the great inconvenience and unnecessary annoyance of Jurors; nor would it be proper to attempt a remedy for this by interfering with the independence of the Coroner, and directing that he should only hold inquests when required by the Chief Magistrate or any other person;—the only check would be the non-allowance of the fees for unnecessary inquests, to be determined by the Quarter Sessions as in England.

There is one other matter which appears to me to require notice. It is the mode and manner in which the Attendance of Witnesses, attendance of Witnesses should be secured. The Natives of this country are very averse from attending Courts of Justice;—of course the Coroner has the power to summon witnesses, and to enforce attendance by warrant if necessary; but I do not know what power either he or the Police authorities have to take security for the continued attendance of witnesses during a protracted inquiry, or to detain them if such security is not forthcoming. I have always declined to interfere in this matter. In cases going before the Supreme Court, I of course bind the parties over to appear on their own recognizance, which it is obvious is but a matter of form. I am certain that the Native Police take some other description of security for their attendance, as well during protracted inquest as for their appearance at the Sessions, and believing that this, however absolutely necessary for the purposes of justice, is still not authorized by law, I think that some Regulation or Act should be passed, authorizing the Superintendent of Police, or the Thannadars, to take security for the continued attendance of witnesses during an inquiry, and for their attendance at the Sessions.

I am afraid that it may be considered that I have extended this Paper to too great a length; but having so extended it, it may perhaps not be inexpedient that I should, in conclusion, briefly refer to the measures I have suggested to be adopted.

1st. It should be determined whether the illegal practice of the Coroner selecting his Jury, should be allowed to continue or not. If not, it should be entrusted to the Superintendent of Police, the Coroner furnishing him with the necessary number of Summons; and in either case the Constables, if possible those who will have to serve the Summons, should ascertain whether the parties intended to be summoned are living, and where, and whether any person entered in the List, for any reason ought not to be summoned in order to some other person being included in his stead. Abstract of the foregoing suggestions.

2nd. On every occasion of sudden or extraordinary death occurring, the European Serjeant of the Division himself ought to repair immediately to the spot, and make every possible inquiry, reporting the circumstance to the Superintendent, or his Deputy, who would use their discretion in directing the Police Surgeon to examine the body. The European Serjeant should make an immediate report of the result of his inquiry to the Superintendent, or Deputy, and on either of these parties feeling that no inquest was necessary, he should make the usual official application, and send it *by the European Serjeant*, together with the parties, who can speak to the facts, on which the Coroner would determine whether to hold the inquest or not. I really do think that *in no case* should the Native Police alone be allowed to conduct the local and preliminary inquiry on the spot.

3rd. The warrant for summoning a Jury should be directed to the Deputy Superintendent of Police, who ought to attend and return the warrant. In nine cases out of ten, after the Jury were impanelled he would be no longer required, but the European Serjeant of the district on which the body is lying, should attend throughout the inquest.

4th. The question of dispensing with the view, in this country, on the discretion of the Coroner, might be considered subject to the statement of particulars by the Coroner, Superintendent of Police, and Police Surgeon mentioned above.

5th. The question of conveyance for the Jurors to and from the place where the body is lying, may be considered. I do not refer to this question on my own account, but it may not suit the convenience of future Coroners to employ their own carriages, and certainly every facility ought to be afforded Jurors, in viewing the body.

6th. Assuming that some act will emanate from the inquiries of the Municipal Committee, I would submit that it should contain a clause touching old and dilapidated walls and houses, and affording means of due security in the building of new, particularly as respects the cement.

7th. That at the commencement of the hot weather, notices on boards be affixed to all wells, warning people against descending them, and that periodically a similar notice be tom-tomed throughout the Town.

8th. That some fixed and defined power should be conferred on the Police authorities to require security for the attendance of witnesses during inquiries, and at the Supreme Court.

9th. That the constitutional right of the Coroner to act for the Sheriff be determined, and in case the clause in the Charter is not held to be virtually set aside by the act appointing Coroners, and the Supreme Court should determine that the duty should be vested in the Coroner, that a rule to that effect be promulgated with the other rules of Court.

I annex a statement of the salary, allowance, &c. of the Coroner. The fixed Establishment amounts to Salary and Allowance. Co's. Rs. 758 : 2 : 1. It will eventually, when all parties vacate, be reduced to Co's. Rs. 726. The annual average contingent charge amounts to Rs. 200, or monthly to Rs. 16-8, making the whole monthly charge Rs. 774, reducible eventually to Rs. 742. The allowance for stationery and printing scarcely meets the demand. There are to be provided, warrants directing Jurors to be summoned, on each occasion of which 36 summons are expended. There are warrants required for the burial of bodies, with and without inquest. Summons to witnesses, warrants for ditto, and for commitment to prison. Few of these are required, but it is necessary they should be ready. There are also warrants for arrest of parties against whom verdict is returned, and others for their commitment to Jail, and also recognizances of witnesses to appear at the Sessions. Parchment for inquisition is supplied from Government. The contingent charges arise chiefly out of the fees to the Constables, viz. 2 Rs. per diem, for summoning persons—and attending the inquests, and for conveying prisoners to Jail, Rs. 8. Palanquin hire for Jurors likewise sometimes forms part of the contingent charge.

CHAS. B. GREENLAW,

Calcutta, July 10th, 1838.

Coroner.

Statement of the Salary and Allowances, &c. of the Coroner.

	Sa. Rs.	As.	Ps.	Co's. Rs.	As.	Ps.	Co's. Rs.	As.	Ps.	Co's. Rs.	As.	Ps.
Coroner,	300	0	0	313	8	0						
House and Office Rent,	250	0	0	261	4	0						
							574	12	0			
ESTABLISHMENT.												
Interpreter and Writer,	60	0	0	62	11	3						
Molovie,				12	0	0						
Brahmin,	12	0	0	12	8	7						
4 Chappassies, at Sa. Rs. 6 each, ..	24	0	0	25	1	4						
9 Bearers, per month	36	0	0	37	9	11						
Allowance for Stationery,	12	0	0	12	8	7						
Ditto ditto, Printing Summonses, ..	20	0	0	20	14	5						
							183	6	1			
CONTINGENCIES.												
For 1832, Sa. Rs.	250	0	0	261	4	0						
„ 1833, „	169	0	0	179	9	8						
„ 1834, „	153	4	0	160	2	4						
„ 1835, „				141	0	0						
„ 1836, (including Feb. 1837.)				259	9	3						
							5)998	9	3			
							12)199	11	5			
										16	7	7
										Rs.	774	9 8

C. B. GREENLAW,

Coroner.

Z. 29.

Abstract of Inquisitions held at Calcutta, during the years 1832 to 1836.

Year.	VERDICTS.						REMARKS.
	Accidental death.	Natural death.	Found dead.	Self-destruction.	Violence by others.	Total Number.	
1832.	4	4	1	3	9	21	There are 21 verdicts, though there were only 20 inquests.—This arises from two verdicts being included in one inquisition, viz. Coosial for Murder of Agah and for Felo-de-se. Of the 9 verdicts under the head "Violence by others," 7 were for wilful Murder, including that of Coosial. The other 6 were convicted. The remaining two verdicts were for wilful Murder against person or persons unknown. One of these was the last case of Infanticide which has come before me. There was one inquest in Jail on an European; one on a Native; and one in the House of Correction on a Native.
1833.	3	4	2	1	7	17	Here again there were only 16 inquisitions, the verdicts of Felo-de-se and wilful Murder against Mootee Ram, being included in one inquisition.—Of the 7 verdicts under the head "Violence by others," 5 were for wilful Murder, of which two were convicted. One was acquitted on the ground of Insanity; one killed himself after committing the Murder. The other case included 7 persons, all of whom absconded; one only was taken, and he was convicted of Manslaughter, and sentenced to pay a fine of Sa. Rs. 2,000, with 6 calendar months imprisonment. The remaining two cases of the seven were, one of Manslaughter—party was convicted and sentenced to eighteen months imprisonment in the House of Correction—the other, the Coroner's verdict was Insanity;—the party was tried on indictment, and acquitted on that ground. Two inquests were held in Jail, one on an European, one on a Native, both debtors.
1834.	8 on 9 bodies.	4	1	2	5	20 on 21 bodies.	Of the 5 verdicts under the head "Violence by others," three were for Murder, one of them was against person or persons unknown. In one case party was convicted; in the other, the party was convicted of Manslaughter, and sentenced to one year imprisonment in the Common Jail. The other two verdicts were for Manslaughter—both parties were found guilty; one was sentenced to pay a fine of Rupees 100; the other imprisonment for one month, and fined a Rupee. One inquest in Jail on an European debtor; two in House of Correction.
1835.	4 on 12 bodies.	4	1	3	6	18 on 20 bodies.	Of the 6 verdicts under head "Violence by others," two for wilful Murder against parties known. In one case the party was acquitted. In the other, six Chinese—four on inquisition, and two committed by the Magistrates—were tried; the four were convicted of Manslaughter, and transported for life; the other two acquitted. Three verdicts were for wilful Murder against person or persons unknown, and one for Manslaughter by furious driving; the parties, two postillions, were found guilty and fined 50 Rupees each. One inquest in Jail on a Crown prisoner Native.
1836.	4	4	2	2	7 on 8 bodies.	19 on 20 bodies.	There are only 19 verdicts while there are 20 inquisitions, these arise out of verdict being returned at the same time against Emam Salim for the murder of two persons, when separated inquisitions were drawn for each; there was also another inquisition for a third person, killed by him, on separate inquest held, the man having died after the other two. Besides the case of Emam Salim, which bears on two of the verdicts out of the seven under the head "Violence by others," there was one other verdict of wilful Murder against an individual and other, unknown. He was tried and acquitted. There were also two verdicts of wilful Murder against person or persons unknown, and one of Insanity. The remaining verdict was for Manslaughter, the party was acquitted. Two inquests in Jail, one on a debtor, the other on a Prisoner for trial. One inquest on Police Prisoner in Town Guard.
	23 on 32 bodies.	20 on 20 bodies.	7 on 7 bodies.	11 on 12 bodies.	34 on 35 bodies.	5) 95 19,	

	Newly born Infants.	Run over, or knocked down by Carriages, Horse, or other animal.	Fall of Walls, Houses, &c.	Self-destruction.	Wilful murder.		Manslaughter.	Homicide by Insane Persons.
					Persons known.	Persons not known.		
1832	1	4	0	3	7	2—0	0	0
1833	0	1	0	2	5	0—5	1	1
1834	0	4	2	2	2	1—3	2	0
1835	0	0	0	3	2	3—5	1	0
1836	0	0	1	2	3	2—5	1	1
	1	9	3	12	19	8—27	5	2

C. B. GREENLAW,

Coroner.

Z. 30.

Abstract of permissive Warrants to bury without Inquest, during the years 1832 to 1836, both included.

Year.	Accidental death.	Natural death.	Found dead.	Self-destruction.	Violence by others.	Total.	Europeans.	Natives.	In Jail.	House of Correction.	Petty Court Jail.	Children Burnt.	Run over.	Fall of Walls or Houses.	Occasion when Inquests would have been held but could not obtain Jurors.
1832.	27	25	24	3	0	79	5	74	3	3	0	6	1	6	1
1833.	31	39	27	8	1	106	9	97	12	4	0	0	1	1	7
1834.	41	34	29	8	1	104	1	103	5	11	0	2	9	5	3
1835.	37	14	21	6	1	79	2	77	3	3	1	1	0	3	3
1836.	21	30	16	13	3	83	0	83	0	9	2	3	2	0	2
5	157	142	108	38	6	451	17	434	22	30	3	12	13	15	16
Annual Average.	31 $\frac{2}{5}$	28 $\frac{2}{5}$	21 $\frac{3}{5}$	7 $\frac{3}{5}$	1 $\frac{1}{5}$	90 $\frac{1}{5}$									

	Burnt.	Drowned in Wells or Tanks.	Run over or knocked down by Carriage, horse or other animal.	Fall from House, &c.	Fall of Wall, House, &c.	By making Wells, while working, or fall of articles being carried.	Kick of a Horse.	Bite of a Snake.	Found Dead in Streets.	Newly born Infants.	Lightning.	Self-destruction.	Violence by others. No. Inquests, could not get Jury.
1832.	Children, .. 6	Children, .. 5	1	2	2	1	1	1	10	2	0	3	0
	Adults, .. 2	Adults, .. 5											
	— 8	— 10											
1833.	Children, .. 0	Children, .. 3	1	6	1	3	1	2	7	1	1	8	1
	Adults, .. 1	Adults, .. 11											
	— 1	— 14											
1834.	Children, .. 2	Children, .. 6	9	5	5	5	1	2	5	0	0	8	1
	Adults, .. 3	Adults, .. 9											
	— 5	— 15											
1835.	Children, .. 1	Children, .. 5	0	7	3	0	0	2	7	0	4	6	1
	Adults, .. 1	Adults, .. 3											
	— 2	— 8											
1836.	Children, .. 0	Children, .. 4	2	9	0	2	1	0	6	2 Still-born	0	13	3
	Adults, .. 3	Adults, .. 2											
	— 3	— 6											
	19	53	13	29	11	11	4	7	35	5	5	38	6

C. B. GREENLAW,

Coroner.

Z. 31.

Police Cash Balance.*Statement by Ramjoy Mookerjee of the Sums admitted by him to be in his hands.*

	<i>Sitting Justices.</i>			<i>Assessment.</i>			<i>Total.</i>		
31st January, 1831.	14,468	10	4	6,179	9	7	20,648	3	11
Received in February,	10,930	13	5	23,932	10	1	34,863	7	6
	25,399	7	9	30,112	3	8	55,511	11	5
Paid in Ditto,	17,925	0	7	21,002	4	8	38,927	5	8
	7,474	7	2	9,109	15	0	16,584	6	2
Received in March,	18,438	14	11	21,254	13	8	39,693	12	7
	25,913	6	1	30,364	12	8	56,278	2	9
Paid in Ditto,	14,725	10	5	22,444	10	11	37,170	5	4
	11,187	11	8	7,920	1	9	19,107	13	5
Received in April,	14,077	12	2	22,322	6	1	36,400	2	8
	25,265	7	10	30,242	7	10	55,507	15	8
Paid in Ditto,	16,969	10	6	22,162	12	11	39,132	7	5
	8,295	13	4	8,079	10	11	16,375	8	3
Received in May,	18,302	0	3	23,033	9	6	41,335	9	9
	26,597	13	7	31,113	4	5	57,711	2	0
Paid in Ditto,	16,153	0	2	22,135	12	8	38,288	12	10
	10,444	13	5	8,977	7	9	19,422	5	2
Received in June,	16,536	2	5	20,928	13	1	37,464	15	6
	26,980	15	10	29,906	4	10	56,887	4	8
Paid in Ditto,	17,474	11	1	21,364	15	2	38,839	10	3
	9,506	4	9	8,541	5	8	18,047	10	5
Received in July, ..	17,104	11	9	21,351	10	11	38,456	6	8
	26,611	0	6	29,893	0	7	56,504	1	1
Paid in Ditto,	16,711	15	9	24,542	14	8	41,254	14	5
	9,899	0	9	5,350	1	11	15,249	2	8
Received in August,	16,889	4	10	24,299	2	7	41,188	7	5
	26,788	5	7	29,649	4	6	56,437	10	1
Paid in Ditto,	14,570	3	8	26,355	12	8	40,926	0	4
	12,218	1	11	3,293	7	10	15,511	9	9
Received in September,	14,048	15	9	28,076	8	11	42,125	8	8
	26,267	1	8	31,370	0	9	57,637	2	5
Paid in Ditto,	12,888	11	4	25,860	15	5	38,749	10	9
	13,378	6	4	5,509	1	4	18,887	7	8
Received in October,	15,405	9	1	26,630	8	11	42,036	2	0
	28,783	15	5	32,139	10	3	60,923	9	8
Paid in Ditto,	17,851	6	2	26,655	8	9	44,506	14	11
	10,932	9	3	5,484	1	6	16,416	10	9
Received in November,	12,784	0	10	12,441	0	0	25,225	0	10
	23,716	10	1	17,925	1	6	41,641	11	7
Paid in Ditto,	13,471	6	0	24,911	4	2	38,382	10	2
Carried over,	10,245	4	1	6,986	2	8	3,259	1	5

<i>Police Cash Balance.</i>	<i>Sitting Justices.</i>	<i>Assessment.</i>	<i>Total.</i>
Brought over,	10,245 4 1	6,986 2 8	3,259 1 5
Received in December,	15,181 0 5	39,391 11 8	54,572 12 1
	25,426 4 6	32,405 9 0	57,831 13 6
Paid in Ditto,	13,611 10 6	23,134 9 9	36,746 4 3
	11,814 10 0	9,270 15 3	21,085 9 3
Received in January, 1835.	16,149 8 11	23,118 2 9	39,267 11 8
	27,964 2 11	32,389 2 0	60,353 4 11
Paid in Ditto,	17,033 8 10	22,092 3 5	39,125 12 3
	10,930 10 1	10,296 14 7	21,227 8 8
Received in February,	18,110 15 7	22,503 15 5	40,614 15 0
	29,041 9 8	32,800 14 2	61,842 7 8
Paid in Ditto,	13,464 0 10	22,547 3 3	36,011 4 1
	15,577 8 10	10,253 10 9	25,831 3 7
Received in March,	17,385 3 7	22,901 13 3	40,287 0 10
	32,962 12 5	33,155 8 0	66,118 4 5
Paid in Ditto,	21,408 3 0	22,659 3 1	44,067 6 1
	11,554 9 5	10,496 4 11	22,050 14 4
Received in April,	16,027 10 7	22,900 11 10	38,928 6 5
	27,582 4 0	33,397 0 9	60,979 4 9
Paid in Ditto,	16,653 4 6	25,864 6 11	42,517 11 5
	10,928 15 6	7,532 9 10	18,461 9 4
Received in May,	17,473 4 4	26,683 5 11	44,156 10 3
	28,402 3 10	34,215 15 9	62,618 3 7
Paid in Ditto,	15,889 15 3	25,727 2 2	41,617 1 5
	12,512 4 7	8,488 13 7	21,001 2 2
Received in June,	16,804 1 4	25,683 13 10	42,487 15 2
	29,316 5 11	34,172 11 5	63,489 1 4
Paid in Ditto,	16,131 7 2	24,267 0 9	40,398 7 11
	13,184 14 9	9,905 10 8	23,090 9 5
Received in July,	16,163 3 1	24,519 1 3	40,682 4 4
	29,348 1 10	34,424 11 11	63,772 13 9
Paid in Ditto,	13,453 5 9	24,256 8 10	37,709 14 7
	15,894 12 1	10,168 3 1	26,062 15 2
Received in August,	7,285 15 3	20,437 11 9	27,723 11 0
	23,180 11 4	30,605 14 10	53,786 10 2
Paid in Ditto,	7,784 3 9	22,495 9 10	30,279 13 7
	15,396 7 7	8,110 5 0	23,506 12 7
Received in September,	25,049 10 5	30,189 13 10	55,239 8 3
	40,446 2 0	38,300 2 10	78,746 4 10
Paid in Ditto,	18,337 15 9	30,117 15 0	48,455 14 9
Sa. Rs.....	22,108 2 3	8,182 3 10	30,290 6 1
Equal to Co's. Rs.	23,582 0 3	8,727 11 6	32,309 11 9
Received in October,	7,569 12 2	23,161 4 0	30,731 0 2
	31,151 12 5	31,888 15 6	63,040 11 11
Paid in Ditto,	9,116 3 0	16,070 6 4	25,186 9 4
Carried over,	22,035 9 5	15,818 9 2	37,854 2 7

<i>Police Cash Balance.</i>	<i>Sitting Justices.</i>	<i>Assessment.</i>	<i>Total.</i>
Brought over,	22,035 9 5	15,818 9 2	37,854 2 7
Received in November,	18,408 10 7	30,386 0 9	48,794 11 4
	40,444 4 0	46,204 9 11	86,648 13 11
Paid in Ditto,	20,621 4 11	34,729 0 6	55,350 5 5
	19,822 15 1	11,475 9 5	31,298 8 6
Received in December,	17,938 5 2	24,692 2 9	42,630 7 11
	37,761 4 3	36,167 12 2	73,929 0 5
Paid in Ditto,	13,946 5 7	21,836 8 1	35,782 13 8
	23,814 14 8	14,331 4 1	38,146 2 9
Received in January, 1836,	16,304 8 3	24,927 14 11	41,232 7 2
	40,119 6 11	39,259 3 0	79,378 9 11
Paid in Ditto,	21,246 4 6	25,754 6 2	47,001 4 8
	18,872 8 5	13,504 12 10	32,377 5 3
Received in February,	18,315 11 7	23,044 3 2	41,359 14 9
	37,188 4 0	36,549 0 0	73,737 4 0
Paid in Ditto,	18,063 14 11	24,527 11 6	42,591 10 5
	19,124 5 1	12,021 4 6	31,145 9 7
Received in March,	22,823 1 3	26,436 13 5	49,309 14 8
	41,947 6 4	38,508 1 11	80,455 8 3
Paid in Ditto,	23,075 12 8	25,797 6 7	48,873 8 3
	18,871 9 8	12,710 11 4	31,582 5 0
Received in April,	21,236 1 10	26,840 5 7	48,076 7 5
	40,107 11 6	39,551 0 11	79,658 12 5
Paid in Ditto,	20,179 14 0	26,405 5 11	46,585 3 11
	19,927 13 6	13,145 11 0	33,073 8 6

To Balance on the 30th April, 1836. The Sitting Justices'	
Books,	19,927 13 6
Assessment Books,	13,145 11 0
	33,073 8 6
Month of May, 1836.	
Received Co's.	21,729 1 10
Siccas, 17,472 : 15 : 1 =	18,637 12 11
	40,366 14 9
	73,440 7 3
Deduct paid Co's.	23,258 3 1
Siccas, 18,156 : 4 : 3 .. or	19,366 10 10
	42,624 13 11
Balance,	30,815 9 4
Month of June, 1836.	
Received Co's.	40,708 11 5
Siccas, 9,255 : 6 : 0 ... or	9,872 6 4
	50,581 1 9
	81,396 11 1
Deduct paid Co's.	34,843 15 2
Siccas, 2,994 : 13 : 9 ... or	3,194 8 3
	38,038 7 5
Balance,	43,358 3 8

Brought over,	43,358 3 8
Month of July, 1836.	
Received Co's.	35,190 14 2
Siccas, 686 : 5 : 4 .. or	732 1 4
	35,922 15 6
	79,281 3 2
Deduct paid Co's.	39,654 7 5
Siccas, 550 : 15 : 0 .. or	587 10 8
	40,242 2 1
Balance,	39,039 1 1
Month of August, 1836.	
Received Co's.	49,547 13 11
Siccas, 1,115 : 0 : 0 .. or	1,169 5 4
	50,737 3 3
	89,776 4 4
Deduct paid Co's.	55,420 14 4
Siccas, 40 : 0 : 0 .. or	42 10 8
	55,463 9 9
Balance, ...	34,312 11 4

Brought over,	34,312 11 4	Brought over,	40,674 15 6
Month of September, 1836.		Month of December, 1836.	
Received Co's.	40,955 12 4	Received Co's.	39,981 3 0
Siccas, 250	268 10 8	Siccas,	"
	<u>41,222 7 0</u>		<u>- 39,981 3 0</u>
	75,535 2 4		80,656 2 6
Deduct paid Co's.	42,623 2	Deduct paid Co's.	47,232 12 5
Siccas,	"	Siccas,	"
	<u>42,623 2 1</u>		<u>- 47,232 12 5</u>
Balance,.....	32,912 0 3	Balance,	33,423 6 1
Month of October, 1836.		Deduct remitted to Treasury	
Received Co's.	41,044 9 5	account, November month	
Siccas, 76 : 4 : 0 ..	81 5 4	Fees,	720 0
	<u>- 41,125 14 9</u>	Escheats,	6,124 15
	74,037 15 0		
Deduct paid Co's.	39,969 10 7	1 Chalaun,	6,844 15
Siccas, 76 : 4 : 0 ..	81 5 4	Conservancy Fines 1 chalaun,	283 8
	<u>40,050 15 11</u>	Different Division Fines, ...	478 0
			<u>7,606 7 7</u>
	33,986 15 1		
Month of November, 1836.		On account Chowringhee plain	
Received Co's.....	57,230 15	chalaun,	5,289 9 7
Siccas,	"	Law Charges,	5,026 14 11
	<u>57,230 15 4</u>	December Month Fees,	764 0
	91,217 14 5	Conservancy Fines,	376 8
Deduct paid Co's.	50,542 14 11	Different Division Fines, ..	340 0
Siccas,	"		<u>1,480 8 0</u>
	<u>- 50,542 14 11</u>	Mr. Samuel Clark's Salary	
		from June, 1835, to Dec.	
	40,674 15 6	1836, 20 bills	<u>491 10 6</u>
Balance,			<u>19,895 2 7</u>

Calcutta Police Office, Conservancy Department.

29th June, 1834.

Some special measures are indispensably necessary for the better Conservancy of the Strand.

1st. Besides being an entirely new Road, and therefore so much work added to the Scavengers' Department; it is, from being open to the River, subject to more wear and tear than the generality of Roads, and is more liable to encroachment and obstructions, from which it requires to be kept particularly free.

2d. I therefore propose that a small establishment may be placed under Mr. Clarke, for the exclusive purpose of keeping the Strand, and Streets leading to it, in good repair, and free from nuisance and obstructions, and that the Superintendent of Roads be directed to allow Mr. Clarke to draw such quantity of Khoa from the Depôt at Coelah Ghaut, as may be necessary for the repairs of the Strand and the Roads hereafter mentioned.

3d. Mr. Clarke's superintendence to extend to the Strand, from Chandpaul Ghaut to Meerbuher Ghaut, including the following Roads leading to it:—

- (1st) From the south-west corner of Saint John's Cathedral to Cauchagoody Ghaut.
- (2d.) From Bankshall Street to Hare Street Ghaut.
- (3d.) From Tank Square to Coelah Ghaut.
- (4th.) From Clive Street to Old Fort Ghaut.
- (5th.) From ditto to Clive Street Ghaut.
- (6th.) From ditto to Jackson's Ghaut.
- (7th.) From ditto to Meerbuher Ghaut.

Mr. Clarke will keep the Strand and the above mentioned Roads in repair, and free from nuisance or obstructions.

4th. He will be informed when licenses are granted for laying out building materials upon those Roads, and will be careful in seeing that the terms of the license are conformed to, and he will consider it his duty, without further orders, to remove any materials which may be placed on the Roads without license, or which may be laid out, beyond the limits granted in the license.

He is not to interfere with the bank in front of the Bankshall. But at all other parts of the bank he will not allow persons to occupy it in any way, without a license from the Magistrates.

7th. He will prevent pins or posts being driven into the banks, for the purpose of fastening boats; and will not allow persons to cook on the bank, or commit any nuisance upon it. Persons offending against this rule, may be taken into custody and lodged in the nearest Police Thannah, whence, if unable to give security, they will be forwarded to the Magistrates.

8th. Copy of the orders to be sent to Mr. Blechynden, to be communicated by him to the Executive Officer, and likewise a copy to the Report Department, with a request that such instructions as may appear necessary, may be given to the Thannadar adjoining the Strand, to aid in giving effect to the above orders.

9th. It may be hereafter desirable to put the repair of the bank under the superintendence of the same person who looks after the Strand, but as the bank is now being faced with Jamah and Khoa by the Lottery Committee, under the superintendence of Mr. Baddily, I would not recommend that arrangement at present.

(Signed) H. SHAKESPEAR, Chief Magistrate.

C. TROWER, Magistrate.

C. F. ARCHER, Head Clerk.

10th The Overseer of the Strand Road is instructed to cause boats touching at the Ghauts immediately to retire, and leave the whole breadth free for the access of new boats, which are to retire in turn to some other part of the bank.

Likewise to prevent horses to be bathed at any other Ghaut than Jackson's Ghaut, and its immediate vicinity.

CALCUTTA POLICE OFFICE,

4th July, 1831.

(Signed) D. M'FARLAN, Chief Magistrate.

C. TROWER, Magistrate.

Scale of duties performed daily by the Overseer of the Strand Division.

11th. To muster the work people at gun-fire, and go all over the Division.

12th. To go again, about 11 o'clock, to see that all is right. To look after the boats for sinking dead bodies, and see that the boatmen do their duty.

13th. To attend again at 2 o'clock, and measure the Road laid with Khoa, and grant a receipt to Mr. Blechynden, who must have it by 4 p. m.

14th. To attend again at 5 p. m. to see that the Road is clear of encroachments, and if it is not so, to see it cleared before dark.

15th. Liable to be called on at all hours on references from the Chief Magistrate, which generally require immediate answer, such as the release of goods carried off the publick Road, the landing of stone ballast from ships, &c. &c.

16th. To go on board different ships to examine ballast; give directions, and superintend the landing of it, see it sifted and broken fit for the publick service.

17th. To look after the Mohter's boats stationed at Jackson's Ghaut and Neemtollah, and the people employed on them. To attend and muster them every evening at 6 o'clock.—*Entered Page 276.*

(Signed) D. M'FARLAN, *Chief Magistrate.*

C. TROWER, *Magistrate.*

Z. 33.

To D. M'FARLAN, ESQ.

Chief Magistrate.

SIR,

I avail myself of your permission to state in writing the additions which I think are necessary to the establishment under me.

My present establishment consists of six Writers and four Peons, and is divided into three departments.

1st. Conservancy.—Neelmoney and Doorgapersaud, and two peons.

2d. Correspondence and Records.—Woomachurn, and Punchanunder, and one peon.

3d. Accounts.—Caussinauth, and Sooroopchunder, and one peon.

The first department more properly appertains to the Superintendent of Roads and Conservancy, and I would beg to suggest that the establishment should be made over to him, and that I should be relieved altogether of Conservancy business.

The second department may remain as at present.

The third department is extremely inefficient. Caussinauth is blind from cataract in his eyes, and is absent on leave. His substitute is a mere copyist, knows nothing of accounts, and but little of English. Suroopchunder is a dull plodding writer, who is quite at fault if taken out of his usual routine; nevertheless I would retain him, as from his long servitude he is acquainted with the business of the office, and would be useful in shewing new hands what was to be done.

In the room of Caussinauth, who might be recommended to Government for a pension, having served upwards of 30 years, I would beg leave to recommend the appointment of an intelligent Christian, or Native Writer, at a salary of one hundred Rupees a month. There is at present no person in my office to whom I can look for the performance of my duties at times, when from illness, or other unavoidable circumstances, I am unable to attend office, and there are books and abstracts required to be kept up which must be constantly looked at, as, if they are allowed to fall into arrears, the trouble of bringing them up occasions twice the labour of writing originally required, and frequently much inconvenience. A short account of the duties that this writer would have to perform—many of which are now done by me or left undone—will shew that there is ample occupation for him. He would write the fair daily and

Z. 36.

*Memorandum of Fire Engines' Establishment.**Rainy Season.**Dry Season.*

1 Constable, at Rupees 60	2 Constables, at Rupees 60 120
1 Serang, at Ditto, 9	1 Serang, at Ditto, 9 9
1 Jemadar, at Ditto, 8	1 Jemadar, at Ditto, 8 8
1 Carpenter, at Ditto, 8	1 Carpenter, at Ditto, 8 8
1 Blacksmith, at Ditto, 8	1 Blacksmith, at Ditto, 8 8
2 Moochees, at Ditto, 6 12	4 Tendals, at Ditto, 6 24
10 Khalashies, at Ditto, 5 50	4 Naibs, at Ditto, 6 24
10 Bheesties, at Ditto, 4 40	2 Moochees, at Ditto, 6 24
	40 Khalashies, at Ditto, 5 200
	80 Bheesties, at Ditto, 4 320
27	195 136
	745

Z. 37.

Abstract of the value of Medical Stores supplied to the Calcutta Native Hospital, the Colingah and Gurranhutta Dispensaries, and the Police.

<i>In the official year, 1833-34.</i>										£ s. d.	Co's. Rs.
Calcutta Native Hospital, .. .. .	..	..	..	..	..	..	..	..	..	179 7 4½	
Colingah Dispensary, .. .. .	..	..	..	..	..	..	..	..	..	214 2 2½	
Gurranhutta Dispensary, .. .. .	..	..	..	..	..	..	..	..	..	157 10 11½	
Police Hospital, .. .. .	..	..	..	..	..	..	..	..	..	14 6 9½	
Ex. 1-10½, or Company's Rupees,										£ 565 7 3½	6,030 9 1
1834-35.											
Calcutta Native Hospital, .. .. .	..	..	..	..	..	..	..	..	..	233 7 4½	
Colingah Dispensary, .. .. .	..	..	..	..	..	..	..	..	..	246 0 5½	
Gurranhutta Dispensary, .. .. .	..	..	..	..	..	..	..	..	..	176 17 1½	
Police Hospital, .. .. .	..	..	..	..	..	..	..	..	..	7 4 2½	
Ex. 1-10½, or Company's Rupees,										663 9 1½	7,076 13 11

A. R. JACKSON, M. D.

Surgeon, Offg. Apoth. H. C.

Z. 38.

The City of Calcutta Abkaree Mehals Daily Ledger, for December, 1836.

Date.	Retail License Tax.	Gin, Brandy, License fees.	Spruce Beer Tax.	Taury Tax.	Gunja Tax.	Total.
1	365 0 0	24	0	62	0	451 0 0
2	182 8 0	0	0	92	248	552 8 0
3		4	0	31	0	35 0 0
5	182 8 0	4	0	61	0	247 8 0
6	182 8 0	16	0	30	0	228 8 0
7	182 8 0	8	0	0	62	252 8 0
8	365 0 0	0	0	0	62	427 0 0
9	334 8 0	0	0	152	0	486 8 0
10	484 7 0	0	0	30	0	514 7 0
12	547 8 0	4	0	60	0	611 8 0
13	547 8 0	0	0	0	0	547 8 0
14	182 8 0	0	0	31	62	275 8 0
15	182 8 0	0	0	0	0	182 8 0
16	182 8 0	0	0	246	0	428 8 0
17		0	0	92	0	92 0 0
19	182 8 0	0	0	31	0	213 8 0
21	182 8 0	0	0	0	0	182 8 0
22	365 0 0	88	0	0	0	453 0 0
23	912 8 0	0	0	0	0	912 8 0
24	182 8 0	0	0	0	0	182 8 0
26	152 0 0	0	0	124	0	276 0 0
27	1,764 0 0	4	0	30	0	1,798 0 0
28	1,794 8 0	0	0	61	0	1,855 8 0
29	517 0 0	0	0	0	0	517 0 0
30	851 8 0	8	15	91	308	1,273 8 0
31	232 12 6	84	80	0	0	396 12 6
	11,058 3 6	244	95	1,224	742	13,363 3 6

Receipts.		Sa. Rs.	Co's. Rs.	Payments.		Sa. Rs.	Co's. Rs.
<i>License Department's produce for Dec. 1836.</i>				<i>License Department's remittance for Dec. 1836.</i>			
<i>Pucka Shops' Tax.</i>							
The month of July, 1836,				31st Dec. 1836, remitted to General Treasury, to W. H. Oakes, Saheb, Sub-Treasurer, for December, 1836, retail License Tax, &c.			
1 license,	152 0 0			1 receipt.	12,506 13 11		13,340 10 7
The month of Aug. 1836,				<i>Commission Acct. Dr.</i>			
2 Do. at 152	304 0 0			To Justice Blaquiére for Dec. 1836, produce 13,363:3:6 at 2½ per cent.	334 1 5		356 5 9
The month of Sept. 1836,				<i>Establ. Acct. Dr.</i>			
1 Do.	152 0 0			For Nov. 1836, ...	531 0 0		554 14 3
The month of Dec. 1836,				<i>Contingent Acct. Dr.</i>			
4 Do. at 152	608 0 0	1,216 0 0	1,297 1 1	Gunny bag & cooley for sending money to the Treasury, from Aug. to 31 Oct. 1836.			
<i>Punch House Shops' Tax.</i>							
Sept. 1836, 1 license 17 days	17 0 0						
Oct. " 2 Do.	61 15 0						
Nov. " 9 Do.	269 15 6						
Dec. " 6 Do.	156 13 0	534 11 6	570 5 10				
<i>Kutcha Shops' Tax.</i>							
Aug. 1836, 6 licenses at 182:8	1,095 0 0						
Sept. " 16 Do. " "	2,920 0 0						
Oct. " 11 Do. " "	2,007 8 0						
Nov. " 15 Do. " "	2,737 8 0						
Dec. " 3 Do. " "	547 8 0						
		9,307 8 0	9,928 0 0				
Retail Tax,		11,058 3 6	11,795 6 11				14,254 1 7

monthly cash accounts; make copies of the latter for transmission to the Accountant General; draw the Pay abstracts, and keep copies of them; prepare monthly lists of Contingent bills, keep copies of them, and make copies for transmission to the Civil Auditor and Clerk of the Peace; keep an abstract of the expenditure in the Assessment Department, to be made up at the end of the year, for transmission to the Governour; keep a note of charges suspended by the Civil Auditor, and many other details which, it is unnecessary to enumerate.

Sooroopehunder should have the Bill department; his business would be to check the calculations of all bills; endorse them; see that they have undergone the necessary examinations in the Superintendent of Conservancy's Office; get them passed by the Chief Magistrate; write up the Establishment Book, and mark off payments in it; prepare the monthly statements of Fees and Fines for the Accountant General; keep abstracts of the diet bills, khoa bills, Contractor of coolies' bills, and several others, and make copies of such bills as are required to be kept.

Kissenchunder, *at present* officiating for Caussinauth, I would beg to recommend as a copyist, on 25 Co's. Rs. a month. He writes a neat hand, and would be very useful in assisting me and the Native writers whenever business was unusually great. He would also write the letters to Government applying for money, letters to the Accountant General, Civil Auditor, Clerk of the Peace and Town, and in case of Sooroopehunder's absence, perform his duties also.

Since the plan of making deposits in and payments from the Bank of Bengal has been adopted, I think the Cash Office might be reduced. The Cashier, I have understood, intends to resign; however with an account at the Bank, the necessity for a Cashier is much lessened, and the number of Mohurers and Podars will admit of reduction. The following is what I would recommend:—

1 Cashier,	..	..	..	..	Co's. Rs.	60	0	0
2 Mohurers,	..	..	..	..		24	0	0
1 Podar,	..	..	..	..		8	0	0
								92 0 0

Present Establishment is,

1 Cashier,	..	..	..	..	Co's. Rs.	62	11	2
1 Deputy,	..	..	..	..		26	2	0
3 Mohurers,	..	..	..	..		36	9	2
2 Podars,	..	..	..	..		17	12	2
								143 2 6

The difference would be per month, 51 2 6

The additions to the establishment of the Department of Accounts would be,

To the writer in the room of Caussinauth—additional,	..	..	..	..	Rs.	40	0	0
To Kissenchunder,	..	..	..	..		25	0	0
and I would further recommend an increase of	..	..	..	..		3	0	0
								68 0 0

a month to the salary of Kissen Sing, peon, employed now as "Bank Peon," a man who has served the office for upwards of thirty years, and whose honesty and regular attendance have been most exemplary. Captain Steel raised him to be a Nayib of the Burra Bazar Thannah, but he resigned the office shortly afterwards, being unable from age to perform the night duties. He has frequently been entrusted with 20,000 Rupees to convey to the Treasury.

I have the honour to be,

Sir,

POLICE OFFICE,

Your most obedient Servant,

2d March, 1837.

H. C. WATTS.

Z. 34.

Calcutta, 23d June, 1837.

MY DEAR BABOO,

Although I had no opportunity of stating it in evidence before your Committee, I think you will find it mentioned in my reports to Government, that the Overseer of the Strand Road purchases himself the Khoa which is used for the Roads in his Division; also that he has the duty of landing stone ballast, and preparing it as Road-metal for all parts of the Town.

The Contractor who furnishes hackeries for carrying the material, also supplies men for measuring it at the Depôts, and spreading it on the Roads, at the rate of four per hundred ferraes measuring, and then spreading. In the Strand Division however, the Overseer supplies the proportion for spreading, and as regards Khoa along the bank of the River, for measuring also. In the latter instance, the measurers also carry, and save the expense of hackeries, which along the bank of the River I deemed superfluous.

Yours faithfully,

W. ABERCROMBIE

To BABOO RUSSOMOY DUTT,

&c. &c. &c.

Z. 35.

June 6th, 1837.

MY DEAR SIR,

The sum put down in the Memorandum I sent you, of the expenses for watering the Chitpore Road, is for five seasons, viz. from October 31st, to June, 1836, inclusive. The charge includes the cost of some Pumps and Carts. A fair average cannot be obtained, as the quantity of Road watered was gradually extended. For the two first seasons it did not go beyond Mutchooa Bazar Road; now the whole Road is watered.

The private subscriptions for watering the European part of the Town have gradually increased. The sums received, are included in the "amount of savings from the Watering Fund," of which you have a memorandum.

They were in 1832-33,	..	..	..	..	..	Sa. Rs.	662	11	0
1833-34,	..	..	..	..	..	..	1,064	15	2
1834-35,	..	..	..	..	..	..	1,348	11	4
1835-36,	..	..	..	..	..	..	1,658	11	4

In the present season (1836-37) the amount will be very considerably greater. I do not know exactly, having only the collection of the bills, but I should think about 3,500 Rs. Lieut. Abercrombie could furnish you with a Memorandum of the monthly subscription.

Yours faithfully,

H. C. WATTS.

To BABOO RUSSOMOY DUTT.

Receipts.—Continued.			Sa. Rs.	Co's. Rs.		Sa. Rs.
Brought forward, . . .			11,058 3 6	11,795 6 11		
<i>Gin, Brandy, Spirits, Licenses Fees.</i>					<i>Particulars of the former outstanding.</i>	
For Augt. 1831, 1 License, . . .	1				By order of Justice Blaquiere, paid to Ramkinker Chatterjee, for repairs to Koolcah Distillery, on 19th Sept. 1821, 1 receipt,	400 0 0
Nov. „ 1 „ . . .	4				On 21, Sept. 1821, 1 Do.	250 0 0
Dec. „ 3 „ . . .	12				On 28, Dec. 1822, 1 Do.	150 0 0
Feb. 1835, 1 „ . . .	4					
Mar. „ 1 „ . . .	4				Paid Caussimauth Chatterjee, on 27th Jan. 1824, 1 Do.	252 1 3
May, „ 2 „ . . .	8				Paid Radanath Chatterjee, on 30th Sept. 1823, 1 Do.	165 11 4
July, „ 4 „ . . .	16				21st Aug. 1830, 1 Do.	154 6 5
Aug. „ 2 „ . . .	8				19th Aug. 1831, 1 Do.	69 14 4
Oct. „ 7 „ . . .	28				2d July, 1832, 1 Do.	76 8 0
Nov. „ 2 „ . . .	8				19th May, 1833, 1 Do.	18 10 0
Jan. 1836, 11 „ . . .	44				24th May, 1833, 1 Do.	150 14 0
Feb. „ 2 „ . . .	8				Nov. 1831, 1 Do.	151 4 0
April, „ 9 „ . . .	36					
May, „ 2 „ . . .	8				Paid Mr. Tockler House rent, for the office of the License and European Distillery Department, from 4th Nov. 1823, to May, 1824, 7 months, at 100 Rupees, 7 receipts, . . .	700 0 0
July, „ 9 „ . . .	36					
Aug. „ 2 „ . . .	8					
Oct. „ 1 „ . . .	4					
Dec. „ 1 „ . . .	4					
			244 0 0	260 4 3		
<i>Spruce Beer Tax for Dec. 1836,</i>						
6 Licenses at 15 „ . . .	90					
1 Do. „ . . .	5					
			95 0 0	101 5 4		
<i>Taury Tax.</i>						
For May, 1836, 1 License, . . .	31					
July, „ 3 Do. . . .	93					
Aug. „ 6 Do. . . .	146					
Sept. „ 4 Do. . . .	129					
Oct. „ 3 Do. . . .	93					
Nov. „ 12 Do. . . .	360					
Dec. „ 11 Do. . . .	341					
			1,224 0 0	1,305 9 7		
<i>Gunja Tax.</i>						
For July, 1836, 4 Licenses at 62	248					
Aug. „ 4 Do. . . .	248					
Oct. „ 3 Do. . . .	186					
Nov. „ 1 Do. . . .	60					
			712 0 0	791 7 6		
			13,363 3 6=	14,254 1 7		
Former outstanding, . . .			2,539 5 4=	2,708 9 11		
			15,902 8 10=	16,962 11 6		
Deduct paid, . . .			.. ..	14,254 1 7		
			Balance, ..	2,708 9 11		
Cash in Treasury, . . .			2,539 5 4=	2,708 9 11		
Former outstanding, . . .						

Z. 39.

Extracts from the Chief Magistrate's Report to Government for the year 1832.

12th. I have now the honour to bring under reconsideration, the question adverted to in the 56th and four following paragraphs of last year's annual Report, and the orders of Government thereon, of the 2d October, 1832.

13th. In obedience to those orders, I consulted the Division Magistrates on the subject, and now forward their replies in the Appendix. It will be seen that, with the exception of Mr. Robison, they are decidedly adverse to the arrangement; viz. disposing of the Judicial and Conservancy. My own opinion as to its feasibility remained unchanged. Instead, however, of immediately urging the matter upon Government, I thought it better to wait for the occasion of presenting the annual Report, when I did not doubt that further experience, and a further record of the quantity of business got through in the year, would fortify me with additional reasons for proposing to carry the plan into effect.

14th. It is very much to Mr. Robison's credit that he, having by far the heaviest Division of the Town, should be willing to undertake the additional labour of the Conservancy. The truth however unquestionably is, that the additional labour sought to be imposed is exceedingly small, and is apparently diminishing. Nine-tenths of these Conservancy cases are of the most trivial description. An inhabitant has put up a screen encroaching on the road, or a shopkeeper a plank over a drain—he is summoned, appears, and promises to remove it; and so on in a great variety of petty matters, needless to be particularized. They are mere confessions, some petty fault, followed by a fine of a few annas. The total amount of fines levied last year is Rs. 2,540, and the number of cases 1830; giving an average for each case of 1 Rupee 7 Annas; but the average number of persons in each case is probably three or four, which certainly is a proof of the trivial nature of the business, and of the offences punished.

If we divide the above 1830 cases equally among the four Divisions, each will have about 450 cases of additional work ;

Sundays, 52	or taking the working days of the year, allowing something for leave, and temporary absents,
English Holidays, . . . 3	at 225,* the additional labour would be two cases a day, occupying, in all their steps, about a
Hindoo ditto, 30	quarter of an hour of the time of each Magistrate each day.
Mahomedan, 13	
Leave and Temporary, 42	
* Working days, . . . 225	
365	

15th. Whatever therefore may be the laboriousness of the Division Magistrates' occupation (on this subject I have added some remarks in the Appendix) it appears to me clear that this small addition of duty cannot much affect them.

16th. Independently of the above reasons, I must mention, that the measure is absolutely necessary, in order to set free the services of Mr. Trower for the Assessment Department, the reasons for which are explained in my letter of the 21st July last.

17th. I beg therefore to propose, that the contemplated change be effected by the issue of orders, that the Division Magistrates shall receive and dispose of the Judicial Conservancy cases arising within their respective Divisions, and grant the licenses for enclosing parts of Publick Roads, adverted to in the Bye-Law of November, 1814, all matters involving expenditure, viz. the Establishment for cleaning, paving, repairing, and watering;—the publick thoroughfares remaining, as before, with the Chief Magistrate, aided by the Division Magistrates as far as may be convenient to them.

18th. This plan will justify the reduction of the Establishment mentioned in the margin.* If possible, they will be employed as part of the increased agency necessary in the Tax Department, though I fear they will be found wholly unfit. This point can be reported upon, when the new arrangement shall have been authorized.

* J. Samuel, 250	
Interpreter, 5	
Madub Chunder, 60	
W. H. Grant, 20	
Isher Chunder, 12	
342	

Ra.
A saving of at least
100 may be counted
upon on this head.

19th. In regard to the other part of this question, viz. the reduction of the whole of the Conservancy Reduction in Sirkars and Peons, and the transfer of their duties to the regular Police of the Town, Saving Rs. 30 & Peons. I am not yet prepared to give a decided opinion. The experiment has been tried by the discharge of three out of the twenty Sirkars, and the employment of six Thanadars in their stead. Captain Steel has latterly expressed to me his fears, that the plan was not improving his Police. The inquisitorial sort of duty expected from a person in this Department, offers strong temptation to the officer employed to traffick in threatening persons with prosecutions, in which traffick the greater power of the Thanadar must give him advantages over the old Division Sirkar, and the consequence of this will be, that the good name and influence of the Thanadar in his Division, and his devotion to his proper business, will be materially lessened.

20th. Without however adopting a general plan of at once disbanding all the old establishment, which would certainly at first give rise to inconvenience, I think it better to go on getting rid of such of the establishment as misconduct themselves, and watching the general effects of the measure for some time longer.

24th. The question of the best way of dealing with Punch Houses, has been a fruitful source of discussion Punch Houses. during the past year. Mr. Blaquiere, who is also Collector of the Abkaree or Liquor Tax, contends for the absolute necessity of demanding and levying the license duty of 5 Rs. per *diem*, for the security of the Revenue, which amounts to two lacs and a quarter Rupees per annum. This the Punch House keepers cannot pay, except for a very short period in the year; and on that ground, it is held by other Magistrates to be necessary to lower the license duty, so as to enable tolerably respectable men to get their living by houses of the kind; and, lastly, many people qualified to judge, hold that there should be no houses for reception of seamen allowed at all.

Memorandum on the preceding letters.

I am not aware that there is any important inaccuracy in the figures adverted to by Messrs. Blaquiere and Magistrates' daily work. Andrew, and possibly upon them, Government may decide that no additional labour should be thrown upon the Division Magistrates. The following is a view of the actual amount of business (as shewn by the annual statement) which passed through the Magistrates' hands in the year 1832.

	Misdemeanors.		Felonies.		Total.		Fines.			Commitments arising out of the foregoing felonies.	
	Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	Rs.	As.	Ps.	Cases.	Persons.
Mr. Blaquiere,	339	307	279	408	618	715	873	0	0	3	4
Mr. Andrew,	389	509	399	559	788	1068	849	7	0	7	8
Mr. M'Mahon,	619	466	345	361	994	827	474	0	0	18	23
Mr. Robison,	1078	1044	508	701	1586	1745	990	5	0	48	69

Taking the working days in the year at 225, the number of cases for each day would be, for

Mr. Blaquiere, between 2 and 3

Mr. Andrew, 3 and 4

Mr. M'Mahon about 4

Mr. Robison, 7

It has no where been stated how many of these causes ever come to a detailed hearing at all, nor how many are properly struck off on a summary investigation that does not occupy ten minutes.

The grand difficulty arises, no doubt, from the state of the law under the Bye-Laws, which requires that two Magistrates should sit together for the decision of every petty case that may come up. Practically speaking, they never were, and in all probability never will be, systematically acted up to in this respect. I apprehend, however, that for all essential purposes their provisions are observed at present with sufficient exactness, in nearly all cases which really call for any considerable caution and deliberation. The cases in which Mr. Blaquiere and Mr. Andrew ought to have sit together, or on a strict application of the law, the Misdemeanors only, they amount to 728. Supposing half of these to have been compromised, and summarily disposed of, there would then have been 364 to have been tried at some length again. The Felonies, which being brought constructively under some head of a Bye-Law, ought to have been decided by two Magistrates, will amount to half of the number recorded. The remaining half being disposed of by commitment, or entire dismissal, requiring therefore one Magistrate only, the number would be 339, or little more than three per day. The whole number of cases in these two Divisions therefore, requiring in the strict exercise of the law the voice of two Magistrates, would be per day. If therefore the figures are at all correct, I feel that I am not justly obnoxious to the censure of doing my best to overwork my brother Magistrates.

In the foregoing remarks, I have thrown out of view the assistance I am able to give the Division Magistrates. I am most happy to have to say, that when I have, in obedience to the general resolutions of Government, taken up a case arising in the Division of any Magistrate, it has never been necessary for me to do so, because the Division Magistrate was tardy, or unwilling instantly to grapple with it. On the contrary, there has been an highly honourable jealousy evinced at my stepping in between the Magistrate and his duty, which feeling I have no doubt will be found to cause the additional duty to be willingly received.

I have the honour to be,

Sir,

Your most obedient Servant,

(Signed) D. M' FARLAN.

CALCUTTA, POLICE OFFICE.

6th April, 1833.

NOTE.—*The following Papers marked Z 40, Z 41, Z 42, and Z 43, have been received since the Report was drawn, and show—First, A Statement of the total Annual Charges of the Calcutta Police for the years 1834-35, 1838-39.—Second, The defalcation by Ramjoy Mookerjee to amount to Sa. Rs. 26,035 : 0 : 4.*

Z. 40.

No. 337

To BABOO RUSSOMOY DUTT,

Honourary Secretary to the Committee of Municipal Inquiry.

SIR

I have the pleasure to forward herewith statement* of the total Police Charges for the years 1834-35 to 1838-39 inclusive, in the form furnished with your letter of the 8th instant. The correctness of the sums mentioned in the column of Magistrates' and Police Superintendent's salaries cannot be vouched for, as the payments on that account are not made here, but at the General Treasury. If accuracy on this head is desired, reference should be made to the Civil Auditor.

2nd.—I have also the pleasure to enclose copies of my letter to the Government of Bengal, dated 24th October 1837, and of the reply dated 11th of the following month, No. 2273, which will afford you the desired information as to the exact amount of the defalcation by Ramjoy Mookerjee, the late Police Cash Keeper.

I am, Sir,

Your obedient servant.

D. M'FARLAN,

Chief Magistrate.

CALCUTTA POLICE OFFICE.

18th June, 1839

Z. 41

Statement of the total of Calcutta Police Charges for the years 1834-35 to 1838-39, inclusive.

Year.	Watching, &c. chargeable to Assessment	Judicial and Conservancy Charges.	Magistrates' & Police Superintendent's Salaries	Total.
1834-35 Sa	2,80,200 12 0	1 56,951	40,800 0 0 56,400 0 0	1,77,952 1 56,400 0
1835-36 Sa	2,33,582 4 4	1,34,090 1 9 23,819 15 6	40,800 0 0 56,400 0 0	4,58,472 6 1 80,219 15 6
1836-37 Cs.	3,12,023 11 4	1,58,951 1 4	99,036 0 0	5,70,010 12 8
1837-38 Cs.	3,27,025 11 7	1,66,063 6 7	99,036 0 0	5,92,125 2 2
1838-39 Cs	3,35,080 1 8	1,69,296 13 10	99,036 0 0	6,03,412 15 6

CALCUTTA POLICE OFFICE.

18th June, 1839.

D. M'FARLAN,

Chief Magistrate

* Of the years 1834-35 and 1835-36 there were for Establishment in Sicca Rupees as follow

	Assessment	Judicial
1834-35	1,15,212 0 0	88,119 13 1
1835-36	1,13,615 2 1	72,061 1 11

In converting these into Company's Rupees the rate of 101 8 0 should be used, that being what Government allows on account of Establishment

Z. 42.

TO F. J. HALLIDAY, ESQ.

Secretary to the Government of Bengal.

SIR,

With reference to my letters of the 9th March, and 27th April last, to the address of Mr. Secretary Mangles, I have now the honor to forward an Abstract Statement of the late Cashier Ramjoy Mookerjee's accounts, made up to the 28th February last, the date of his discharge, shewing an excess of Payments beyond receipts by him of Company's Rupees 6,704 : 9 : 5.

2nd. In former communications I have spoken of a considerable balance being due by Ramjoy Mookerjee : there is such a demand against him, founded, as I shall proceed to shew, upon balances of old accounts reaching back to 1794, the amount of which is Sicca Rupees 26,035 : 0 : 4.

3rd. It would no doubt have been desirable that these balances had been paid up, and but for the deceit practised upon the Office (as explained in the 2nd para : of my letter of the 27th April last,) the whole sum now due (reduced by a payment of 2,000 rupees made since the 28th February last,) would have been Company's Rupees 11,942 : 10 : 2;—the main point now to be considered is, in what way payment can be exacted.

4th. I am very much afraid that the late Cashier is not able to pay any thing. I am sure he is unwilling to pay all. perhaps he might be induced 'o pay a small sum, to get rid of the fear of prosecution.

5th. I beg the attention of Government to the items composing the balances of Sa. Rs. 26,035 : 0 : 4, they are,

I.	Balance of Cash in the Assessment Department 1st May 1831, Sa. Rs.	5,405	1	1
II.	Ditto of Sitting Justices' Department ditto.	9,480	13	6
III.	Ditto of the Town Duty Funds, or Conservancy Department ditto ...	11,149	1	9

Sa. Rs. 26,035 0 4

6th. In regard to the first item, there seems no alternative but to write it off our Books. The only documents which we have to shew that the money is really due by Ramjoy Mookerjee are rough cash books, which are supposed to be transcripts made by the clerks in the Office of his Bengallee accounts, which are not recorded; but these rough books are not signed by Ramjoy, nor does any thing appear in them to shew that the transactions they record are his more than any other persons. To establish our claim against him for this balance would therefore be extremely difficult, if not altogether impracticable. The only point on which a question might be raised in regard to this balance is, why payment of it was not secured in 1831, when I took charge of the Office, and the system of accounts came to be more closely looked to. The answer to this is, that our Office has never been considered in any respect an office of receipt, and that it was hardly considered possible that money could accumulate with our Cashkeeper, who was supposed to receive no money but what he had to pay away. My attention was never strongly drawn to the existing balance; the items of it were in a great measure unknown to me; and it was always understood that since 1831 we were drawing more money from the Cashkeeper than he received. The personal character of Ramjoy was excellent, and he was understood to be wealthy: the few thousand rupees which we supposed he owed us were we thought secure: once or twice on counting the Cash in the Treasury we found more than we had a claim to. Mr. Watts frequently observed a delay in writing up the accounts, which prevented our having a clear view of the details of balance at any given time.

7th. I may here mention that the balance under this head and the other two, was never in any manner made over to me, nor did Mr. Barwell receive any balance from Mr. Shakespear, or Mr. Shakespear from his predecessor. In those days the responsibility was divided among the Bench of Justices.

8th. Upon grounds similar to those above stated I must recommend the writing off the second item also. The circumstances in this case are however stronger than in the first: we have no books in this Department that extend beyond 1799, and they open with a balance of Sa. Rs. 5,255 : 8 : 7; it is thus impossible to trace up the balance to the time when there was *none*, and so verify the accounts.

9th. In regard to the third item an effort must be made to recover it			The balance accrued between 1823 and 1829,		
Balance of Town duty			and there is not the plea of old date for not demanding it, though the books that shew it		
Fund Sa. Rs.	11,119	1 9	are similar to those of the Assessment Department already described; but it might		
or Co's. Rs.	11,892	6 1	be possible to prove our claim to it from the vouchers in our hands, or at the		
Deduct excess of pay-			General Treasury. I propose therefore to retain this balance, and with the sanction		
ments beyond receipts			of Government to set against it the excess of payments made by Ramjoy between		
by Ramjoy Mookerjee	6,704	9 5	the 1st May 1831 and the 28th February last, as also the amount subsequently		
as per Statement			paid by him, which would leave Company's Rupees 3,117:2:0 still due, and which		
Amount subsequently	2,070	10 8	might possibly be recovered from him.		
paid by him. . . .					
Balance to be recover-					
ed.	3,117	2 0			

10th. In the statement which accompanies this letter credit is given to Government for Fines payable to the Supreme Court, and for proceeds of the Convicts' Labor in the House of Correction, the amount of the last of which was ordered by Mr. Mangles' letter of the 13th December last to be appropriated to improvements in the House of Correction. I beg the sanction of Government to draw the aggregate of these items, viz. Co's. Rs. 3,571:9:4, to enable me to pay what is due to the Supreme Court, and to carry the suggested improvements in the House of Correction into effect.

11th. The system introduced in February last of banking with the Bank of Bengal has been found very convenient, and affords the best security for the large sums of money we have occasionally in hand. No larger amount is left in the hands of the present Police Cashier than is requisite to meet the daily petty calls upon the Office, and his deposit of Company's Paper is sufficient to cover the balance remaining in his hands. The transactions of one day are written up the next, and at the end of the month the amount exhibited in balance is counted by the Head Clerk, and acknowledged in my presence by the Cashier himself, whose signature to the English account is then obtained.

12th. It has been suggested to me by Mr. Dorin, that instead of receiving orders on the Sub-Treasurer for large sums of 20 to 25,000 Rupees at a time, I should be allowed to take up money on receipts to the Sub-Treasurer in such sums, and at such periods, as may be required. If Government see no objection to this suggestion, I will adopt it in future. It will be requisite to advise the Sub-Treasurer of the arrangement. The monthly credit given me would be Co's. Rs. 10,000, or the average of monthly payments during the last year.

I have, &c.

CALCUTTA POLICE OFFICE,

(Signed)

D M FARLAN.

28th October, 1837

Chief Magistrate

Note to Para 3rd.—I am afraid that the hope of a successful prosecution alluded to in my letter of the 27th April last is vain. The Cashkeeper's son would confess disobedience of orders, but he would deny the embezzlement. We should then be put upon our proof of the debt due by him, and would entirely fail. For any thing that we could prove, he would only have taken his own

Z. 43

To W. C. BLAQUIERE, ESQ

A Magistrate of Calcutta

Judicial Department.

SIR,

I am directed to acknowledge the receipt of the Chief Magistrate's letter of the 28th ultimo, with its enclosure, relative to the sums which appear in the accounts of the Police Office against Ramjoy Mookerjee, the late Cashkeeper, and to inform you in reply, that under all the circumstances of the case, as shewn by the letter under acknowledgment, the Honourable the Deputy Governor of Bengal is pleased to authorize you to write off Profit and Loss the items noted on the Margin* but he relies upon your best endeavours for speedily realizing the admitted balance of Co's. Rs. 3,117:2:0 which the Chief Magistrate considered it possible to recover.

* Amount Balance of Cash in the Assessment Department
on the 1st of May 1831, Sa. Rs. 5,405 1
Ditto Ditto of Sitting Justices' Department on the 1st of
May 1831, Sa. Rs. 9,480 13

2nd. The aggregate of the proceeds of Convict Labour and the Judicial Fines, amounting to Co's. Rs. 3,571 : 9 : 4, you are authorized to draw, and appropriate to the purposes stated in the 10th para. of Mr. McFarlan's letter.

3rd. The arrangements proposed in the last para. of the said letter are approved and sanctioned, and the Sub-Treasurer will be apprized accordingly

FORT WILLIAM,
14th November, 1837

I am, &c.
(Signed) F. J. HALLIDAY,
Offg. Secretary to the Government of Bengal
(True Copies.)
D. M'FARLAN,
Chief Magistrate

Z 44

FO. W. COBB HURRY, ESQ
Secretary to the Committee of Municipal Inquiry

SIR,

I have laid before the Chamber of Commerce your letter of 30th ultimo, requesting information on the subject of your Committee's inquiry, on the proposition of a plan for the future management of the Town Funds, and their disbursement: and I am instructed to state, in reply, that the Chamber does not consider it within its province, as a Body, to take up the question generally; but, on all points within its proper sphere, to which the Committee may be pleased to direct the Chamber's attention, it will be happy to collect and to convey to you whatever information and suggestions you can indicate as likely to be applicable to the provisions which it is intended to recommend.

Although the Chamber forbears submitting any scheme of Municipal administration, it desires me to express its cordial approbation of the object of your investigation, and its earnest hope that the labours of the Committee may soon obtain the introduction of a comprehensive and unexceptionable measure of Town Government

I am, Sir,
Your most obedient servant,
W. LIMOND, *Secretary*
CALCUTTA,
BENGAL CHAMBER OF COMMERCE
June 27th, 1837

Z. 45

FO. F. J. HALLIDAY, ESQ
Secretary to the Government of Bengal, Judicial Department.

SIR,

I have the honour to submit for the information of his Honour the Deputy Governor of Bengal copy of a Memorandum for the Superintendent of Police, made by me on the 28th instant, on the subject of the power of Police Officers to bring complaints under the Fire Act, XII of 1837, and the desirableness or otherwise of their doing so.

I have, &c.
(Signed) D. M'FARLAN,
Chief Magistrate
CALCUTTA POLICE OFFICE,
30th July, 1838

Z. 45. (A)

Memo. for the Superintendent of Police.

The only cases that have been brought forward under the Fire Act, XII of 1837 (excepting two) have been on the prosecution of Police Officers.

Almost all have been against the very poorest and most unfriended of the people. Poor widows and infirm old men have for putting up a wretched Hooghla or palm-leaf covering to shelter themselves from the rain, been called up before the Magistrate, who, from the defect in the law, has been unable to assign any punishment.

The law will shortly be altered, but the general question remains, whether such suits should be brought at the instance of the Native Police.

The power of complaining in a summary way is no doubt a great handle for these men to levy petty sums for allowing the breach of the Regulation. I am not aware of any proved cases in which money has been taken, but probably it has, and unless a manifest necessity exists the power should not continue.

The Act probably contemplated that the Police were to be informers and prosecutors. It does not however give the specific power to do so, and I see that in most English Acts of Parliament a power to prosecute is given to any one where it is intended that the Constables or other Police should be occasional plaintiffs.

This power is not given here, and we may fairly assume that it is not intended to be exercised.

Generally it appears to me that neighbours on the vicinage are the only natural plaintiffs in such a matter this. They are mainly interested, and if they are silent there seems little use in putting our Police into the unworthy character of spies or informers.

On these grounds the Superintendent will be pleased to order the Police to take no notice of such cases, but to leave the parties interested to complain.

(Signed)

D. M'FARLAN,

28th July 1838.

Chief Magistrate.

Z. 46.

No. 1540.

Judicial Department

To D. M'FARLAN, ESQ.

Chief Magistrate of Calcutta

SIR

I am directed to acknowledge the receipt of your letter dated the 30th ultimo, with its Enclosure, and to inform you in reply, that the Honorable the Deputy Governor of Bengal approves of the Instructions issued by you to the Superintendent of the Police prohibitory of Police Officers bringing complaints under the Fire Act, XII of 1837.

I am, &c.

FORT WILLIAM

(Signed)

F. J. HALLIDAY,

4th August, 1838.

Secretary to the Government of Bengal.

Z. 47.

Copy of Bengalee Istahar issued to Thannadars in consonance with above.

এস্তাহারনামা কাছারী পুলিশ সহর কলিকাতা পূর্ব মূতন খড়ুয়া ঘর বান্ধিতে না দেওনের বিষয় থানাদারদিগের পুতি যে হুকুম হয় এক্ষণে তাহা রহিত করিয়া লেখা যাইতেছে যে খড়ুয়াঘর বান্ধিবার বিষয় থানাদারগণের মজাহেম হইয়া নালিসবন্দ হওনের আবশ্যক নাই যদিপি নয়া খড়ুয়া ঘর বান্ধিতে কোন পুজা লোকের কতি বোধ হয় তাহার নালিস সেই ব্যক্তি করিবেন ইতি সন ১৮৩৮ সাল তারিখ ৭ আগষ্ট ।

(True copies.)

D. M'FARLAN, Chief Magistrate.

List of Papers referred to in Evidence, and concerning matters of the Report, but which have not been printed.

1. Mr. D. M'Farlan's letter to Mr. Secretary Thomson, dated 29th July 1831, relative to Weights and Measures (Vide App. C. p. clxxxii.)
2. Letter from the Chief Magistrate (D. M'Farlan, Esq.) to the Secretary to Government, dated 24th July, 1832, relative to the House Tax.
3. Correspondence with Government relative to the reduction of Tax on Punch Houses experimentally (Vide App. C. p. xlix.)
4. Captain Birch's letter to the Chief Magistrate, dated 15th April, 1836, giving opinion with respect to Mr. Alexander's proposition of Farming the Assessment.
5. Register of Licence Shops on the 1st May, 1836, (Vide No. 23 of the List of Papers belonging to the Paper Book.)
6. Letter from Mr. P. O'Hanlon, dated 8th July, 1836, giving cover to a copy of Mr. J. W. Alexander's proposal for Farming the Assessment, dated 24th March, 1836, also a statement procured from the Accountant-General's Department relative to the cost of collecting the Assessment.
7. The letter from Mr. Secretary H. T. Prinsep, dated 27th July, 1836, to Baboo Russomoy Dutt, which gave cover to the detailed statement of the origin and progress of the Abkarree Tax, (printed in App. to App. C. p. 41 Q.)
8. The letter from the Honourable J. Erskine, dated 12th Dec. 1836, to the Secretary of the Fever Hospital and Municipal Committee, in which was,
9. Letter from W. C. Blaquiére, Esq. dated 28th Jan. 1837, transmitting the documents, marked 10 to 13.
10. Details of the Abkarree Receipts for 1835-1836, particularizing the number of each class of Shops which paid the Tax during that year, with the names of the venders who paid the above Tax, and situations of their Shops (not printed.)
11. List of Establishment in the Licence Department on the 1st May, 1836, with statement of the Duties of eleven Sircars, two Jemadars, and sixteen Peons employed in the Licence Department (not printed.)
12. List of Duasta Shops in the Suburbs on the skirts of the Circular Road, to the injury of the Licence Department in Town (not printed.)
13. Statement shewing the amount realized on Extra Passes for the following years 1824-1825 to 1835-1836 (not printed.)
14. Quarterly List of Stock and Stores in the Southern Gowkhanna, by J. Green, Overseer, dated 1st January, 1837, transmitted by Lieut. W. Abercrombie.
15. Quarterly List of Stock and Stores in the Northern Gowkhanna, by R. M. McCulloch, Overseer, dated 30th January, 1837, transmitted by Lieut. W. Abercrombie.
16. The letter from Mr. E. B. Gleeson, dated 9th February, 1837, to Baboo Russomoy Dutt, which gave cover to the statement of Prisoners in the House of Correction, and the statement shewing the proceeds and expense of Convicts' labour for the year 1836. (printed in App. to App. C. p. 63 Z. 3 to Z. 5.)

17. Correspondence relative to the reduction of Tax on Punch Houses, referred to in the Chief Magistrate's examination (vide App. C. p. xlix.)
18. The letter from Joseph De Hezeta, Esq. Secretary to the Lottery Committee, dated 2nd March, 1837, which gave cover to a statement of the profits of each Lottery, and the expense of the Establishment and contingencies for the last twelve years, (printed in App. to App. C. p. 53, U.)
19. The letter from Dr. A. R. Jackson, Surgeon, Officiating Apothecary Honourable E. I. Company, dated 7th March, 1837, to Baboo Russomoy Dutt, which gave cover to the abstract of the value of Medical Stores supplied to the Calcutta Native Hospital, the Colingah and Gurranhatta Dispensaries, and the Police Hospital (printed in App. to App. C. p. 128, Z. 37.)
20. Particulars of the duties performed by the Office establishment of the Magistrates of the First Division.
21. Ditto, Second Ditto,
22. Ditto, Third Ditto,
23. Ditto, Fourth Ditto,
24. Letter from Mr. R. Leslie, dated 9th March, 1837, forwarding a statement of the Receipts and Disbursements of the Court of Requests and its establishment, &c. (both not printed.)
25. Letters from Lieut. W. Abercrombie, dated 23rd January and 10th June, 1837, amending his evidence in regard to the profit made by the Executive Officers.
26. The letter from D. Hare, Esq. Secretary to the Medical College, 25th May, 1837, which gave cover to the College Council's scheme for an Hospital to be attached to the Medical College, (printed in App. C. p. cliii.)
27. List of Native Inhabitants competent to serve as representatives of the elective body, transmitted by Baboo Ram Comul Sein.
28. Ditto Ditto, transmitted by Baboo Dwarkanath Tagore.
29. The letter from Mr. Secretary Mangles, dated 30th May, 1837, to Baboo Russomoy Dutt, in which was transmitted the copy of Lieut. Abercrombie's Memorandum on the Conservancy Establishment, and resolutions passed thereon by the Magistrates of Calcutta, (printed in App. to App. C. p. 78, Z. 23.)
30. The letter from R. D. Mangles, Esq. dated 6th June, 1837, to Baboo Russomoy Dutt, which gave cover to the Report on the Conservancy of the Town, by Lieut. W. Abercrombie submitted to Government through the Chief Magistrate, (printed in App. to App. C. p. 82, Z. 24.)
31. The letter from H. C. Watts, Esq. (no date) which gave cover to the papers marked Nos. 32 and 33.
32. Letter from Mr. Secretary R. D. Mangles, dated 9th June, 1835, to the Chief Magistrate relative to the Police Report of 1834, (Vide App. C. p. cxvii. cxl. and Report page 125.)
33. Letter from Mr. Secretary R. D. Mangles, dated 24th May, 1836, to the Chief Magistrate, relative to the Police Report of 1835.

A P P E N D I X D.

E V I D E N C E

TAKEN BY THE

S E C O N D S U B - C O M M I T T E E

UPON

THE FEVER HOSPITAL

AND

MUNICIPAL IMPROVEMENTS.

CALCUTTA :

G. H. HUTTMANN, BENGAL MILITARY ORPHAN PRESS.

1838.

A P P E N D I X D.

E R R A T A.

Page.	Line.	<i>Page</i>	<i>Page</i>
4,	18,	for Bugan	read Bugan
7,	12,	„ one	„ me.
13,	12,	„ Samilpoor	„ Santipoor.
33,	12,	„ J. Tweedale	„ F. Tweedale.
53,	1,	„ Saturday 10th	„ Monday 12th.
56,	23,	„ 4th Division	„ 4 Divisions.
63,	41,	„ Roads	„ Houses.
64,	9,	„ 3000	„ 300.
88,	20,	„ happens	„ happens.
98 98,	12 5,	„ Polygamy	„ Polygamy
111 111,	21 21,	„ answered	„ answered
120,	14,	„ effectives	„ effective.
123,	37,	„ avoided	„ remedied.
124,	22,	„ expensive	„ expansive.
141,	8,	„ pulmp	„ tall.
158,	12,	„ freest	„ freest.
232,	Coloured Plan, signed R. H. Blechynden, read A. H. Blechynden.		

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MUNICIPAL ENQUIRY.

Second Sub-Committee.

EVIDENCE.

Town Hall, Saturday, 17th Sept. 1836.

The following 26 Queries, approved by the Meeting to be sent to such persons as may be likely to furnish the Committee with the information required, regarding their several neighbourhoods respectively.

QUERY 1.

Are the present Drains kept open, or generally neglected and suffered to get choked up ?

QUERY 2.

Are the present Drains pretty free from bad smells, or are they generally in an offensive state, if so, from what causes ?

QUERY 3.

Whose duty is it to keep the Drains in order, and how is that duty usually performed ?

QUERY 4.

Is the quarter in which you reside, or where you carry on business, subject to be flooded, if so, in what spots does the water lodge, and for what length of time, and are such spots offensive, either in themselves, or from other, and what causes ?

QUERY 5.

What Tanks have you, and are they kept clean, and their sides and banks kept in repair ? Are they foul and offensive ?

QUERY 6.

Are there any pools or holes which are apparently sources of disease from being the receptacles of filth, &c. if so, state their locality ?

QUERY 7.

What water is generally made use of for drinking and culinary purposes ? Is it Tank, or Well, or River water, and is it wholesome ?

QUERY 8.

Have you any suggestions to offer for the better supply of drinking water, whether as to quantity or quality ?

QUERY 9.

Where Well water is used, are the Wells properly attended to, and kept clean and free?

QUERY 10.

Do you think any unhealthiness is occasioned by cultivation in your neighbourhood?

QUERY 11.

State what is the description of such crops you may think deleterious, and at what season do they become so, and how might any melioration be obtained?

QUERY 12.

Is there any rank jungle, or wild vegetation which you conceive a cause of disease, and where situated?

QUERY 13.

Are the Huts and Houses of the Native Inhabitants, sufficiently separated, and apart, to admit of free ventilation, or are they in dense masses? In the latter case would there be any difficulty experienced in opening them out, or in making Streets, and Lanes, for that purpose?

QUERY 14.

Are there any ruinous, or uninhabited houses in your neighbourhood, which are receptacles of filth, or carrion, or grown up with vegetation, so as to be injurious to health?

QUERY 15.

Do you recommend any particular spots in which new Roads would be attended with advantage?

QUERY 16.

What description of Hut is considered by the Natives to be the most conducive to health, the mud walled, or matted,—the grass, or tile roofed?

QUERY 17.

What Markets are there in your quarter? Are they kept clean, as far as possible, or are they not kept in good order, but offensive to the neighbourhood? and are they for the sale generally of all provisions, or are any of them appropriated exclusively to Butchers' Meat, or to Fish, or to Vegetables, or to two of those descriptions only?

QUERY 18.

Is there any one whose duty it is to see that the Markets are kept clean? Is the filth of the Native Houses in your neighbourhood removed generally out of the compounds? and when so removed, where is it deposited, and when, and how carried from the place where deposited?

QUERY 19.

Are there any Public Privies in your neighbourhood? Are they ever cleaned, and how? and how often—and of what description are they, and are they offensive, and in what degree?

QUERY 20.

Are there any Private Privies in your neighbourhood—in what number compared with the number of Houses, and how, and how often, are they usually cleaned, and are they offensive, and in what degree?

QUERY 21.

In what manner are the dead bodies of animals disposed of in your neighbourhood? whose duty is it to remove them, and is this duty properly performed? Is there any nuisance occasioned by delay or neglect in removing them?

QUERY 22.

Mention any Native habits which you consider injurious to health?

QUERY 23.

Are the burying grounds in any degree neglected? Are they so much so as to be injurious to health, and in either case, whose fault is it, and what would you suggest to remedy the evil?

QUERY 24.

What are the most prevalent Diseases among the Native inhabitants, and to what extent, and with what effects has Inoculation been introduced?

QUERY 25.

What season of the year is considered by the Natives to be the most unhealthy?

QUERY 26.

State any general causes of unhealthiness or of discomfort to the inhabitants which may not have been already noted down? State any peculiarly healthy situations, and any peculiarities observed in such places?

*Answers to the foregoing 26 Queries, received from the
undermentioned Individuals.*

1.—ANSWERS OF SREENAUTH MOOKERJEE, SHOBA BAZAR.

No. 1.
Sreenauth Mookerjee
to
Municipal Sub-
Committee,
Shoba-Bazar, 2d Jan.
1837.

Q. 1.—The Drains in general are kept open, excepting in some places, where they are neglected and suffered to get choked up.

Q. 2.—The Drains are generally pretty free from bad smells, excepting here and there, and particularly in those parts of the narrow lanes on the sides of which lower classes of people inhabit, and where carriages, &c. are scarcely passable. The cause of which cannot with more propriety be assigned to any thing else than to the negligence or inattention of the Public Officers, whose duties are to look over them, and who, in consequence, are paid by Government.

Q. 3.—There is, as I believe, a set of Public Officers, including Europeans and Natives, attached to the Conservancy Department of the Police Office, who are vested with authority to keep the Drains in order, but whose negligence, in general, retards the performance of the same.

Q. 4.—There are several places subject to be flooded in rainy seasons; viz. several spots lying on the west-north-west, north-north-east, and south of the premises I at present occupy in Balakhana Street. Muchhwahatta or Fish market, and its adjoining ground, lying on the eastern frontier of the Market called Sobhabazar. Some parts of the lane on the north of Rajah Gopeemohun Deb Bahadoor's Bytackhana. Some spots in Lall ~~Bazar~~, situated on the north of Shambazar Street, and so on. In some of these places the water lodges for several days, while in others for several hours, after heavy showers of rain. The spots then become offensive of course, not only in themselves but also from other causes, viz. from the want of proper Drains on their sides, and from their having some filthy Tanks or Pools adjoining to them, which, being quite filled up by heavy rains, the water (mixed with the filth, &c.) is spread all over the ground, and nuisance occasioned thereby.

Q. 5.—There are, to my knowledge, twenty-two Tanks—out of which only six are kept clean, but the rest foul and offensive. Their banks and sides are also not kept in repair.

Q. 6.—There are thirty pools or holes, and almost all of which are apparently the sources of disease, being unclean and consequently receptacles of filth,

&c. They are situated as follows, viz. 6 in Balakhana Street, 11 in several places near Raja Nobkissen's Street and Shampookhur Street, 3 in Lal-bagan on the north of Syam-bazar Street, 4 in Hogulkoonria Lane, 2 in Nundram Son's Street, and 4 in Baniatollah Lane.

No. 1.
Sreenauth Mookerjee
to
Municipal 2d Sub-
Committee,
Shoba Bazar, 2d Jan.
1837.

Q. 7.—River water is generally used by the Hindoo inhabitants of higher caste both for drinking and culinary purposes, excepting in some instances when Tank water or that of a Well is also preferred. Mahomedans as well as other low castes in general, make use of Tank water or that of a Well. River water being in constant motion on account of the tides, is considered by the generality of Natives, as lighter than any other water, and consequently wholesomer. In winter the River water becomes more clean and pure than in any other seasons. Good Tanks and well-repaired Wells, are scarcely to be found out in this part of the town, and consequently, in my humble opinion, River water, after getting the same cleaned, if the same be not brackish, is more preferable to any other water, either for drinking or any other purposes.

Q. 8.—If each house of this City be furnished with a subterraneous stream or reservoir for the supply of River water, much facility may afford as to the supply of water. In other instance sufficient number of Tanks, if properly excavated in every part of the native inhabitation, and kept in thorough repair, much may be done as to the quantity or quality of supplying better water.

Q. 9.—Well water both in this, as well as in other parts of the town, being used generally by the lower classes of people, they are seldom kept clean and free.

Q. 10.—I do not find out any such cultivation in my neighbourhood which may prove injurious to health.

Q. 11.—There being no such crops in the neighbourhood where I reside that may prove deleterious, nothing can be said on the matter.

Q. 12.—There are on the sides and banks of almost all the pools or holes stated before, and even on those of the several of the Tanks, rank jungle or wild vegetation, which certainly are the causes of diseases.

Q. 13.—The native huts in general are in dense masses, and therefore no free circulation of the air can, in their present state, be admitted through them. Houses are not to be found out in that state in every part, although in some places they are very closely situated to each other. I do not think any difficulty would be experienced in opening them out, or making streets, &c. through the same, for free ventilation, provided the Government think it proper and advisable to undertake the tasks to themselves.

Q. 14.—There are plenty of houses in my neighbourhood in a delapidated state, some of which are uninhabited, and in a state injurious to health, being receptacles of filth, &c. and grown up with vegetation.

No. 1.

Sreenauth Mookerjee
to
Municipal and Sub-
Committee,
Shoba Bazar, 2d Jan.
1837.

Q. 15.—As construction of new, and wide roads in every part of so large, and populous a City like Calcutta, cannot fail to do much good to the public, particularly to the inhabitants, I therefore for the present humbly recommend six spots—one called Lal-bagan for a new road, and the five rest for widening and straightening the old narrow and crooked lanes called or known by the names as follow, viz. Balakhana Street, Callypersad Dutt's Street, Baniatollah Lane, Nundram Sen's Street, and Benmallee Sircar's Street. If these narrow lanes be made wide and straight as far as possible, with sufficient number of new cross roads in appropriate places, and if a new road be opened from the above mentioned Lal-bagan to the new circulating road all along east and west, much benefit will result thereby; but seeing the gradual reduction of public expenditure, I am afraid to say how the task will be performed.

Q. 16.—Mud-walled and tile-roofed huts are, in many respects, preferable to any other kind of huts. Matted huts covered with grass are undoubtedly very dangerous to those who reside in them, particularly in so populous a City as Calcutta, the result of which is seen almost every day. At this season scarcely a day passes without some intelligence of fires having broken out here and there, and which are often attended with the loss of lives, either of men or animals, besides the loss of the property of the owners caused thereby. Dragging of water engines from one quarter of the town to the other, for the purpose of putting out the fires is, at the present period, too frequent, although with insufficient advantage. Straw huts are the mothers of these unfortunate occurrences, and the evil therefore ought not to be left unremedied.

Q. 17.—In the quarter I reside there is only one Market or Bazar called Sobhabazar, in which requisite provisions of almost every description used by Natives are sold. No Butchers' Meat is to be had there. Fish and Vegetables in it are daily sold and in abundance. The Market is offensive to the neighbourhood, not being kept clean and in good order, particularly in rainy seasons. Fisherwomen and the sellers of fruit and other culinary herbs, connected with the Market, are allowed to open their respective shops daily on parts of the Public Road called Chitpore Road, which lies on the west of the said Market, and they being generally crowded by their customers, much inconvenience is thereby felt by the public who happen to pass by the road. But whether such encroachment on the Public Road, as mentioned above, is made under some particular authority of the Police, or under the arbitrary power of the proprietor of the Market, is not known.

Q. 18.—The owner of the Market is the person into whose hands the power of keeping the Market clean, rests. Besides there is a set of Public Officers who have long been fed by Government, and in some instances by the public, with the sole view of getting the town as clean as possible. The filth of the Native houses are generally removed out of the compounds to the Public Street, from whence it is generally carried away by the Scavengers' carts, with some neglect now and then.

Q. 19.—There are altogether six public Privies in my neighbourhood: Out of which two are very closely situated to my present residence at Balakhana Street.

One being on the front with an adjoining tank or pool, and the other behind of the same, with several adjoining holes. These two Privies have never, to my knowledge, been cleaned. The filth that is daily gathered in them is, at first removed from the particular spots of the Privies, and deposited in several earthen jars or other vessels or pots that are placed on the adjoining ground of the said Privies for the purpose; these jars or vessels, &c. when quite filled up, the filth is taken out of them and either thrown into the adjoining tank, pool, or holes, or deposited beneath the ground by digging a new hole sufficiently deep to contain it. Sometimes also the filth is scattered over the adjoining spot, and left to remain there for ever to be dried by the sun. In a word, the aforesaid two Privies and their adjoining ground, &c. have been very offensive to the inhabitants, and to ~~one~~ in particular, who, with some of the other families, is generally taken ill, most probably by the offensive state of the aforesaid Privies; but no one has sustained more by the nuisance than my two infant children, and their mother, whom I have never found quite restored to health. The rest of the public Privies are nearly in a similar state with the two described above.

Q. 20.—Almost every house in the neighbourhood is furnished with a separate private Privy, the greater number of which are in a state of uncleanness. They therefore must be offensive though not equally so with any of the public Privies. Some of the private Privies are cleaned periodically, i. e. once a month, or once in three months, and so on, and this duty is generally performed by the Sweepers who are paid for it by the owners of the house, and who, if tendered with opportunity to carry the filth to some of the neighbouring public Privies and throw the same into the adjoining pools or holes of the said Privies, neglect to carry the same to the River side. The adjoining pools, &c. of any of these public Privies are therefore not only the receptacles of the filth of the public Privies, but are also the receptacles of those of private ones.

Q. 21.—Dead bodies of animals are generally thrown into the River at the expense of the person or persons near whose residence the same may happen to fall. In some instances the Waggoners of the Scavengers' carts, with the aid of the Chowkeedars, remove the same, but seldom without some separate pay for their labours, although I believe it is either their duty or that some of their superiors connected with the Conservancy Department of the Police Office. It of course occasions nuisance when the dead bodies of the animals remain untouched or unremoved for one, two or three or more days, either by the neglect of the person or persons near whose residence the same might happen to fall, or by that of the Public Coolies, and which is sometimes the case.

Q. 22.—The Native habits of erecting huts and other buildings in dense masses, without leaving sufficient space for free circulation of air through them, is, in my opinion, injurious to health. Besides this there are many other Native habits calculated, in some way or other, to prove prejudicial to the health, and of which for the present I only name two. First, the irregularity of time in which the Natives in general take their meals, especially in cases of invitations on occasions of any public

No. 1.
 Sreevaath Mookerjee
 to
 Municipal 2d Sub-
 Committee,
 Shoba Bazar, 2d Jan.
 1837.

Festivals or other ceremonies. According to the ancient custom of the Natives, they are, on the aforesaid occasions, generally invited to make Muddhunnya Bhojun, or to dine at noon in the day time, but the dishes are never served to the guests at that hour. The guests in general begin to assemble at the place where invited after 12 o'clock, and two or three hours, and sometimes more time, elapse before the dinner gets ready to be served to the guests. In some places we are obliged to dine at two, in other at three, while at the third at four or five o'clock in the afternoon, in cases of invitations.

Second.—The Native habit of keeping up at nights on occasions of public as well as private entertainments. On these occasions generally the Natives retain into their services Songsters and Songstresses of different descriptions, viz. Kubitawallas, Jatrawallas and Nautch Girls, &c. The singing, &c. at their houses, generally commences at 9 or 10 o'clock in the evening, terminating always at five or six o'clock the next morning. During which time, besides the people of the house where such Tamashas happen to take place, greater numbers of neighbouring people and other spectators assemble there in crowds, to partake of the entertainment, and who, in most cases, keep themselves up the whole night. Accounts of illnesses among the Natives are generally heard after such entertainments are over. And therefore, if the present mode of Native entertainment be discontinued, and English way of giving the same be substituted in their stead, i. e. all singing and playing, &c. commencing earlier in the evening, be terminated before 12 o'clock at night, much benefit will accrue thereby as to the health of the Natives.

Q. 23.—No Burying Ground exists in the neighbourhood I reside.

Q. 24.—Fever in general is the most prevalent disease among the Natives. At the present time, many persons are found to be afflicted with this disorder, and some have lately died of this complaint also. Small-pox, Cholera and other illnesses also become predominant in sometime or other. Inoculations in the European way have, in the family of some inhabitants, been introduced with beneficial effects; while in the family of poorer classes, the Native mode of inoculating is also attended with success.

Q. 25.—The rainy season in particular, and a few days in the beginning of the cold weather in general, are considered by the Natives the most unhealthy.

Q. 26.—The subject having been submitted to me but recently, I have not had sufficient opportunity to think upon it, and bring the same into my deeper consideration. Consequently I am not sufficiently prepared for the present to state any other cause of unhealthiness or discomfort to the inhabitants than the improper or inefficient Medical treatment of the *Vyddyas*, or Native Physicians, to them in cases of illnesses. Most of these *Vyddyas* being unlearned, unskilled and unqualified in the Medical Sciences, their treatment often proves hurtful to the inhabitants and in some cases deleterious. And I therefore humbly suggest for the establishment of some Medical Institutions to enable the inhabitants

to avail themselves of the prompt Medical aid of the European Physicians occasionally in a more efficient footing than heretofore.

I do not see any peculiarly healthy situation in the neighbourhood I reside ; but on the contrary I find it too offensive, and consequently very insalubrious, owing chiefly to its present filthy, dirty and disorderly state, which loudly call out a thorough improvement.

SHREENAUTH MOOKERJEE.

2nd January, 1837.

No. 1.
Sreenauth Mookerjee
to
Municipal 2d Sub-
Committee,
Shoba Bazar,
2d January, 1837.

2.—ANSWERS OF RAJAH KALIKRISHNA BAHADOOR, SHOBA BAZAR.

No. 2.
Rajah Kalikrishna
Bahadoor
to
Municipal 2d Sub-
Committee,
Shoba Bazar,
13th January, 1837.

Q. 1.—The present Drains, (as far as I am informed,) on the borders of the Main Roads, are kept open ; but not those in Retired Lanes, which are generally choked up.

Q. 2.—The Drains in exposed situations are not subject to bad smells ; but it is otherwise with those that are in Retired Lanes. And, in the rainy season, their offensiveness is greater than at other times of the year. This arises from the accumulation of filth, &c.

Q. 3.—It is the business of the Members of the Conservancy Board to exercise a constant supervision over the labours of the Overseers employed in the four Divisions ; and these, I believe, usually exact from their Conservancy Sircars and Peons the daily work set forth in Purwánahs for their guidance.

Q. 4.—The quarter where I reside, is subject to be flooded in the rainy weather, when water lodged in the Drains of Rájá Nobkishen's Street, particularly about its Eastern direction, arising from its not being properly repaired and sloped ; and this injures the Edifices which are near, and is also injurious to health, from the effluvia occasioned thereby.

Q. 5.—There are two Tanks that are kept clean and in order, one within my Family Premises, and the other in the opposite House Grounds. The water of Shámpukur and Balákhána Tanks are clean ; but the sides and banks are not in good order.

Q. 6.—There are six pools, which receive ordure, &c., situated at Kaorá-pára, Churámani Dutt's Street, Newgy's Tank ; and three on the South of the Market, called Shobá Bázár ; also, two holes, that lie on the North of the Shámpukur Thánáh.

Q. 7.—River water is in common use with Hindus, particularly for drinking and culinary purposes ; but the middle class of people who live at a distance from

No. 2.

Rajah Kalikrishna
Bahadoor

to

Municipal 2d Sub-

Committee,

Shoba Bazar,

13th January, 1837.

the Ganges, generally use this for drinking only ; and those again, that are needy, and cannot pay the cost of bringing it, use other water that is at hand for all purposes. Some persons use boiled water when their constitutions oblige them to it.

Q. 8.—If the River (Hooghly) water can be kept free from filth, and from the dead bodies that now commonly float in it, it would be a great benefit to the inhabitants. I cannot suggest any better improvement on this point ; and, will only add, that running streams are always more light and wholesome, than still-water, a fact strongly upheld also in all Hindu Medical Works.

Q. 9.—This can best be answered by the several Reports of Sircars and others employed in inspecting Roads, &c. I believe, however, that they who use Well water are not unmindful to keep their Wells clean and free.

Q. 10.—There are no Crops raised, nor any specific cultivation in my neighbourhood, save a few Vegetables in Gardens, and from these I am not aware that any unhealthiness is created.

Q. 11.—There are many kinds of Crops produced in different seasons, several of which, I believe, to be deleterious ; but to meliorate them, would be a matter of no little difficulty, besides that, the attempt would entail both labour and expense, and lead also to losses on the part of the Husbandmen connected therewith. I have likewise been informed that these Crops, though deleterious in themselves, are advantageous in some climates and countries, to people who engage in growing them.

Q. 12.—There are Sáluk or Naul roots and Kachee (Arum), produced in dirty and old Tanks. And Oles, (Arum Campanulatum) Kcorá (Sonneratia Apetala fruit), Kámrángá (Averrhoa Carimbola), Kenduk (Diospyros Melanoxylon), Betphul (Calamus-rotang fruit), Marich Shák, Chukapálung-Shak, Manur Shák, Dhenki Shak, Gádháparnarnava Shák, or herbs ; Bun-Alloo, Bunkachu, (roots) Gábfruits, &c. that grow in jungles, and are hurtful to health.

Q. 13.—The huts and houses of the citizens are clustered in some spots, and separated in others. In spots densely inhabited, there is no free circulation of air. To open them out, however, by Streets, and Lanes, will, I fear, be difficult and objectionable ; because, the owners will suffer an encroachment on their lands, which will lessen their rents ; and Householders will experience loss from the destruction of brick walls and roofs.

Q. 14.—There is not, as I am informed, any unoccupied and ruinous houses in my neighbourhood. Wherever such exist they must engender filth, &c. which cannot but be injurious to health. The Sircars of the Tax Office, however, can furnish a list of unoccupied Premises, if there be any.

Q. 15.—If the Strand Road can be extended as far as Barrackpore ; and new cross Roads constructed, first, from the Strand to the Chitpore Road ; secondly, from the Strand to the Lower Circular Road, passing through Jorrasángo Street ;

thirdly, from the Hántkholáh Street to the East of the Lower Circular Road ; and fourthly, from Káshi Mitter's Ghát to the Shobá-Bazar Street ; all these improvements would no doubt tend to promote commerce, and afford freer communication, and thereby augment the value of Property ; at the same time, that they would embellish and better ventilate the Town and Northern Suburbs.

No. 2.
Rajah Kalikrishna
Bahadoor
to
Municipal 2d Sub-
Committee,
Shoba Bazar,
13th January, 1837.

Q. 16.—The Natives consider that the grass-roofed and mud-walled huts far better and more conducive to health than tiled ones, supported by matted walls ; because the former keep off sunbeams, dews, and rain, though subject to conflagration ; besides, crows and other birds are destructive to tiles.

Q. 17.—There is a Market in my neighbourhood called Shoba-Bazar, which I believe is kept clean and in order. In this Market staple productions of every description and various kinds of fish are daily sold. From rotten fish, there is sometimes an offensive smell. No Butcher's Meat is here brought for sale.

Q. 18.—The owner of the Market in question is the proper person to say who is appointed to see that it is kept clean or otherwise. The filth of houses in my neighbourhood is generally removed from the compound out of the private doors of the Privies that are near the roads ; and this is carried at mid-day, and deposited in the back grounds of the premises, if there be such, or thrown into the river on the Southern part of Nimtollah Street.

Q. 19.—There are three Public Privies in my neighbourhood ; two on the North and South of the Shobá-Bázár, and the other at the Bálákhánáh Street, which are not always well cleaned, and to each is attached a Well as a receptacle for filths, or thrown into the river. In wet weather, attended with wind, these are sources of great nuisance.

Q. 20.—The Private Privies that lie in my neighbourhood, are double in number to the houses, and are cleaned usually once or twice in a week. The poorer tenants generally keep a Privy among 5, 10 or 15 persons, and all such are cleaned only once or twice a month, and are consequently offensive.

Q. 21.—There is no depository for dead animals in my neighbourhood. It is the duty of the Conservancy Sircars to report, and Scavengers remove them when so reported. This duty is, I believe, properly discharged, and no delay or neglect is occasioned in removing them.

Q. 22.—The Native *habits* in regard to rising, dining, drinking, sleeping, dressing, &c. are not the same with all. It is difficult, therefore, to decide how far they are prejudicial to individuals. The ordinary Hindu habiliment however, and especially the mode of clothing among the poorer classes, are considered by many to be injurious to health.

Q. 23.—The duties of burying grounds are performed agreeably to the creed, faith, and usages of parties. I apprehend no negligence obtains in this respect.

No. 2.

Rajah Kalikrishna
Bahadoor
to
Municipal 2d Sub-
Committee,
Shoba Bazar,
13th January, 1837.

If neglected from a want of relations or kinsmen, the fault would then be justly imputed to the owners of houses or huts for not reporting the same to the proper authorities of the Police.

Q. 24.—The predominant diseases among the Natives are the following
-Cholera-Morbus ; Fever attended with a change to a morbid state of the humours ; Intermittent Fever ; Fever and Ague ; Spleen ; Epilepsy ; Cholic ; Asthma ; Cold ; Pulmonary Consumption ; Cough ; Palsy ; Piles ; Rheumatism ; Venereal Affections ; Gout ; Itch ; Bilious Disorders ; Hypochondria ; Diarrhœa ; Hydrocele ; Head-ache ; Nervous Diseases ; &c. Inoculation exists among the Hindus in general, and is effected by the use of the matter or pus taken from the natural sort of spontaneous eruptions breaking out on human bodies.

Q. 25.—In change of Monsoons, and in the months of July, August and September, epidemic maladies rage, when the Natives become generally indisposed.

Q. 26.—There is no other source of unhealthiness in my humble opinion, beyond the different causes as expressed above, except what occasionally cannot but be produced from excesses in eating, dining, sleeping, &c. at irregular times, as well as mental uneasiness.

KALIKRISHNA.

No. 3.

Aumulchunder
Gangooly
to
Municipal 2d Sub-
Committee,
Dhurmahatta,
18th January, 1837.

3.—ANSWERS OF AUMULCHUNDER GANGOOLY, DHURMAHATTA.

Q. 1.—Drains which lie on the sides of Public Street are generally kept open, but those within small lanes and narrow paths are often neglected, and in some instances suffered to be choked up.

Q. 2.—They are generally pretty free from bad smells near the public Streets, but offensive within small lanes and narrow passages, from their not being as often cleared or attended to, as mentioned in answer to the preceding query.

Q. 3.—It is the duty of the Officers of the Conservancy Department of the Police to keep them in order ; which duty is tolerably well performed where neglect may attract public attention, but the reverse is the case, where there is little or no fear, of its being taken notice of by the public, in consequence of the situations of the drains, being such, as to screen them from their observation.

Q. 4.—No.

Q. 5.—We have but one Tank in this neighbourhood attached to the new Mint, which is always clean, because no filth or rubbish is suffered to be thrown into it ; and its sides and banks are kept in good repair ; but its water is not very

wholesome, in consequence of tallow, oil, and dirt, of the Mint Engines being constantly swept and conveyed to it by water passages made for that purpose.

Q. 6.—There are some puddles in the piece of ground, now the property of Baboo Aushootos Day, which lies to the west of our dwelling house, caused by earth being dug out of them for building huts near them, which are receptacles of filth, &c. and consequently sources of distempers and unhealthiness.

Q. 7.—The river water is generally used for these purposes, which is wholesome from October to March, but becomes injurious to health from April to Sept. From April until the rains set in, it turns saline, when drinking water is variously obtained by the genteel part of the community—some provide for this season by keeping in store a certain number of jars filled with the River water in the month of February, others bring River water for drink from Bulagur, ~~Saulipore~~, and other places up the country; where its quality and taste remain almost unaltered; or from the Tank-square, Jangreetolao, or some other Tanks in Gardens in the Suburbs of the City, whose water is known to be clean and sweet, while the lower classes of people drink the water taken up from the River the same day, or procured on the 9th, 10th or 11th day of the moon, as circumstances admit. During autumn, the River becomes muddy, and swelled with the abundance of impure water that descends into it from stagnant lakes, and creeks, and unhealthy regions; when people take the precaution of having the River water cleaned and purified with alum, *nirmole*, and the like substances, before they use it for purposes alluded to in the query.

Q. 8.—As the water of the Mint Tank is not wholesome, if a large Tank or Digge, be dug out in some part of this neighbourhood where huts are too closely situated, it will do a great deal of good, particularly in that part of the year when the River water becomes (as I have stated in answer to the preceding query) unwholesome.

Q. 9.—Well water is seldom used in our neighbourhood, except for washing clothes, cleansing the culinary utensils and other wares, watering and cleaning yards and floors, and for such other purposes. Some even wash themselves with well water; but this is very seldom the case, the River Ganges, which is so much revered by the Hindoos, being close by, and its water available at a very cheap price. Wells in this quarter are generally cleared once a year, which keeps them pretty clean and free; but their water is unwholesome.

Q. 10.—There is no cultivation of any sort in our neighbourhood.

Q. 11.—The above answer may be applicable to this query also.

Q. 12.—There is no rank jungle or wild vegetation in this part of the City, it being too closely inhabited, and the ground rent being too high to admit of any such thing.

Q. 13.—Both Huts and Houses of the Native inhabitants in this quarter are situated in dense masses; nevertheless, any attempt to open them out by making new

No. 3.

Aumulchunder
Gangooly

Municipal 2d Sub-
Committee,
Dhurmahatta, 18th
Jan, 1837.

Signature

No. 3.
 Annulchunder
 Gangooly
 to
 Municipal 2d Sub-
 Committee,
 Dhurmahatta, 18th
 Jan, 1837.

Streets and Lanes, how desirable so ever it may be, will, I apprehend, be attended with much difficulty and opposition, as there are houses of many ancient rich families in this part of the City, and several of them must be demolished in effecting such openings; and where Huts are situated, the ground rent being too high, their owners cannot easily be prevailed upon to give up a portion of their Lands for making room for free ventilation of air among the Huts of their tenants, particularly when those very tenants seem to feel no physical inconvenience on account of their Huts being in dense masses, and their habits make them insensible to its injurious effects.

Q. 14.—There are several old and ruinous houses in our neighbourhood which are almost all inhabited and are consequently pretty free from filth, &c. but the quantity of water that lodges in them, in consequence of having no free passage, renders them injurious to health.

Q. 15.—Between the Meerbahur and Nimtollah Ghauts, there are no cross Roads leading from the Dhurmahatta Street, to the Strand, excepting some narrow winding paths, made by private individuals through their own Lands, for the accommodation of their tenants, who reside between those two Streets. I would therefore suggest for the convenience of the public, to have two cross Roads opened, one on the north of the new Mint, and another across the foul Tank that lies near Baboo Hurrymohun Thakoor's Ghaut. I also recommend to have the Maidaputty Lane widened so as to admit Carriages freely passing through it to Darjeeputty; and to extend the Lane that lies on the south side of Raja Sookmoy Roy's Dwelling House, and make it meet in a direct line with the Chitpore Road through Shushtitollah.

Q. 16.—Mud-walled and grass-roofed Huts are considered more conducive to health, but people in Town prefer the tile-roofed, through fear of fire.

Q. 17.—There are two Markets in this neighbourhood, the Bazar of Rajah Sookmoy Roy, and that of the Rajah of Burdwan, both which are generally kept in a neglected and an unclean state, and are consequently in some measure offensive to their immediate vicinity. Vegetables, Fish, &c. brought to the first-mentioned Bazar, are chiefly disposed of to wholesale purchasers, who supply other Markets with the same; but in the latter, they are sold in retail. Both these Markets are appropriated to the sale of Vegetables, Fish, Spices, &c. and have no Butcher's Shops in them, they being chiefly intended for the Hindoos.

Q. 18.—It is the duty of their owners' people, to see them kept clean, which is not properly attended to by them, in the instances alluded to in the answer to the preceding query.

The filth of Native Houses in this quarter is not generally suffered to remain within the compounds, so long, and to such an extent, as to become obnoxious to health, but generally removed in time, and deposited on the margins of public streets and drains, from whence it is carried away by Scavenger's carts.

Q. 19.—There are two rows of Tutties in front of the new Mint, on the eastern side of the Dhurmahatta Street, one of which is hired exclusively to the guard and other people of the Mint, and the other is appropriated to the accommodation of the public. These are cleared every day and are generally free from bad smell, in so far as can be expected from such houses. But the public Privies or Tutties which lie on the *Posta* of Rajah Sookmoy Roy, are kept in such a neglected and an unclean state, as to be always offensive to the neighbourhood.

Q. 20.—There are some private Privies about the huts, situated in the piece of ground on the eastern side of the Dhurmahatta Street, in front of the Juggernaut and Ramsita Ghauts, which are generally dirty and offensive, although the carrion is removed almost every day by Méthers, who receive a certain fixed monthly sum for their wages, from each head that goes there. One of them may be compared to three huts or houses in number.

Q. 21.—Dead bodies of animals are taken away by Scavenger's carts, and thrown into the River—any nuisance is seldom occasioned by delay, or neglect of the Scavengers in the performance of this duty in our neighbourhood.

Q. 22.—Indolence, want of exercise and uncleanness are the most injurious habits of the Natives which at present strike me ; besides these (I may call general bad habits) some of them are in the habit of sleeping in the day for hours, after taking their meals, or whenever at leisure, sleeping all night on the terraces and varandas of houses, and the like open places during summer and spring, walking a great distance to their homes with wet clothes on, after bathing in the river or tanks—all which I consider to be the causes of unhealthiness and distemper.

Q. 23.—We have no burial grounds in our neighbourhood.

Q. 24.—Fever and cholera occasion many deaths among the Natives, but the lingering diseases which are prevalent among them are the piles, running, costiveness, hydrocele, asthma, and ring worms, itches and other cutaneous disorders. The people of this neighbourhood are in general averse to vaccination, and have their children inoculated at a very early age, the effects of it having almost invariably been very favourable.

Q. 25.—Various opinions obtain among the natives with regard to the effects of the seasons ; but the greatest part of them consider autumn and the times when seasons change as the most unhealthy of all.

Q. 26.—The making of cokes within the compound of the new Mint, is a nuisance to the neighbourhood ; besides which, no other general cause of unhealthiness or discomfort has fallen within my observation which have not been comprehended in the above queries ; nor do I know of any particularly healthy places, whose peculiarities deserve to be noticed.

No. 4.
Bishonauth Mottyloll
to
Municipal 2d Sub-
Committee,
Bow Bazar, 4th Feb.
1837.

4.—ANSWERS OF BISHONAUTH MOTTYLOLL, BOW-BAZAR.

Q. 1.—The Drains in the high Roads, and wide Streets are kept in good order, but those in narrow Lanes, are generally very much neglected, and suffered to get choked up.

Q. 2.—Many of the Drains are free from bad smells. Those however which are in narrow Lanes, are generally in an offensive state. This may be attributed to the habits of the class of people who reside in such localities, as well as to the neglect of those, whose duty it is to look after the Drains.

Q. 3.—There is a particular set of people attached to the Polico Establishment to clean the Drains, but they are not very punctual in the discharge of their duty to the Native quarters.

Q. 4.—I know of two particular places subject to be flooded, the one called Kistomohan Chunder's *Burwary Tollah*, and the other Ramtonoo Tucco Seedhantho's *Tole*. Besides, there are many narrow Lanes, which are subject to the lodge of water in the rainy season, owing merely to the want of free water-passages. The water however does not remain on the spots for more than 4 or 5 hours after the rain has ceased, and is productive of no serious mischief except a very great inconvenience for the time being.

Q. 5.—There are many Tanks in the neighbourhood where I reside, but out of which, to the best of my knowledge, five are kept clean, the rest foul and offensive. The sides and banks of all these five Tanks are kept in repair.

Q. 6.—There are, to my knowledge, no sort of pools, or holes which are receptacles of filth, &c.; but there are some spots which are filthy, and are suffered to remain uncleared for several days, thereby occasioning a great nuisance which is no doubt a source of disease. Such for instance is the narrow Lane and the ground on the west of it leading from Hedaram Banerjee's Lane to the south, and lying on the west side of the premises in the occupation of my nephew Obey Churn Banerjee.

Q. 7.—River water is always made use of for drinking, by most of the people. They seldom or never use Well water for the purpose, but some of them make use of the water of the Lall Diggee and that of the Tank at Wellington Square, for drinking. They sometimes use Well water for culinary purposes where it is particularly good, but Tank water is most generally made use of. The water used both for drinking and culinary purposes is generally considered wholesome.

Q. 8.—If there be two more Tanks similar to the one at Wellington Square they would be of much benefit to the people of this neighbourhood.

Q. 9.—Well water is most generally used to clean the dishes, &c. of the people; many of the Wells are kept free and unoffensive.

Q. 10.—There is no such cultivation in my neighbourhood, consequently I have had no opportunity of judging of its influence.

Q. 11.—The preceding remark applies to this question.

Q. 12.—There is no such jungle or wild vegetation in the neighbourhood in which I reside as may prove prejudicial to health.

Q. 13.—The huts and houses are generally built in dense masses, and so close to each other, that they invariably prevent the free circulation of air. It would not be very difficult however to have them opened, by allowing proper compensations to the residents, and afterwards forming streets by means of some outlay.

Q. 14.—There are, to my knowledge, no such houses in my neighbourhood.

Q. 15.—I know of no particular spots in which new roads would be attended with advantage, but I humbly suggest that if the narrow and crooked lanes termed “Doorga Churn Pittorey’s Lane,” “Gour Day’s Lane,” “Mudden Dutt’s Lane,” “Obhoy Churn Haldar’s Lane,” and “Champatollah Lane,” be made a little wider and straighter, it would be a source of great advantage to all those who inhabit the sides of these Lanes. As I shall derive some personal benefit from the mending of “Doorga Churn Pittorey’s Lane,” I am ready to give up all the ground belonging to me that may fall in it, besides some pecuniary contribution.

Q. 16.—Matted and grass-roofed huts are better in my opinion in respect to health, than mud-walled and tile-roofed ones, because the former do neither become too much damped in the rainy season, nor too much heated in summer. It depends however entirely upon the choice and convenience of the people to prefer the one or the other.

Q. 17.—The Market we have in our quarter is the well known Bow-bazar, and it is always kept in good order. Fish and Vegetables are the commodities of sale there, but no sort of meat is to be found.

Q. 18.—The proprietor of the Market is the person to look after its clearing, and the work is generally performed at his own expense. The filth of the houses is always removed to the streets, and carried away by the Scavenger’s cart. In such places however where the cart cannot enter, the filth is suffered to remain, since the coolies attached to it, do not take the trouble of going in with their baskets, which they are in duty bound to do.

Q. 19.—There are two public Privies in this quarter, the one at Bow-bazar, and the other at a place called Karanee’s Bagan, and they are kept quite clean and inoffensive.

Q. 20.—Privies are attached to almost all the houses, and in some there are more than one. Many of these Privies are daily cleaned, but some are very much neglected and thereby become extremely offensive.

No. 4.
 Bishonauth Mottyloll
 to
 Municipal 2d Sub-
 Committee,
 Bow Bazar, 4th Feb.
 1837.

Q. 21.—Whenever dead bodies of animals are observed in public roads or wide streets, the Chowkedars get one of the Scavenger's carts to have them removed. But the narrow Lanes I believe are not so much attended to, which produces nuisance.

Q. 22.—There are innumerable habits which are highly prejudicial to health, but out of which I only here allude to the principal one, and that being the irregularity of time in taking meals.

Q. 23.—There is no burial-ground in the neighbourhood where I reside.

Q. 24.—Fever, Cholera and Small-pox are the prevalent diseases among the natives of this country. The old mode of inoculation is still preserved among some of the natives, but those who employ European Doctors have their children inoculated in the European, and of course may be said the safe method.

Q. 25.—The rainy season and the commencement of the cold weather, are considered by the natives the most unhealthy.

Q. 26.—Although I plead my inability to do justice to the last, and concluding query, yet I feel it a duty incumbent upon me to say as much as possible, and in doing which I avail myself of the opportunity of stating something regarding the present mode of carrying away, and throwing filth out of the public and private Privies by the Mehters. Formerly, these Mehters were not permitted to go out with filth during the day, but to perform their duty at an advanced hour of the night. But now, on the contrary, they walk through the streets, and high roads with baskets of filth full of stink on their heads, at any hour of the day. But when it happens to the lot of a person, who has just made a hearty meal, to fall before any one of these Mehters, it is needless to say how it is felt by him. Is it not possible that vomiting is the immediate effect? When such is the state of things it is no doubt uncomfortable to the inhabitants. I therefore most respectfully suggest that immediate orders be issued to put a stop to the offensive practice of carrying filth in the day, substituting, however, the night in its stead. I could perceive no peculiarly healthy situations in my neighbourhood.

Besides this there is another source of unhealthiness and discomfort which it is proper to mention here. The filth that is removed from those places where the lower class of people reside, is, instead of being always thrown into the river, lightly buried somewhere else in the neighbourhood, thereby occasioning a great nuisance. On my enquiring into the reason of this offensive practice, I was told that the Ghaut-keepers do not allow the filth to be thrown into the river unless they could get something by threatening the poor Mehters. In order to remedy this evil, I humbly beg to say that strict orders be issued on the Ghaut-keepers never to interfere about a matter which they merely do for sinister purposes.

BISHONAUTH MOTTYLOLL.

*Calcutta, Bow Bazar, }
 February 4th, 1837. }*

**5.—ANSWERS OF DUKHINANUNDUN MOOKERJEE,
CHORE BAUGAN.**

No. 5.
Dukhinanundun
Mookerjee
to
Municipal 2d Sub-
Committee,
Chore Baugan,
20th February, 1937.

Q. 1.—The Drains in the public Roads are generally cleaned, but those in the small Lanes of this extensive part of Calcutta, thickly inhabited by my countrymen, are often neglected.

Q. 2.—The Drains in our public Roads are, comparatively speaking, kept free of bad smells, but those in our narrow Lanes and Streets are little attended to by the City Scavengers; the filth that consequently accumulates in them, renders the atmosphere unwholesome.

Q. 3.—The Conservancy Department. The reply to the 2d Query applies to this.

Q. 4.—In Mooktaram Baboo's Street, where I reside, the following spots are subject to the lodgement of water. From Nilmoney Mulick's Takoorbary to Suroop Mulick's House, and from Ramsoonder Mitter's to Tarryneechurn Sircar's House, but the water does not remain for more than two or three hours, and produces no serious injury to the inhabitants, though it is a source of much inconvenience to them.

Q. 5.—There are about 12 or 13 Tanks in this neighbourhood, the water generally is foul, and unfit for drinking, not being sufficiently deep, or supplied by springs; as regards the majority of them scarcely any attention is paid to their repair. No difficulty however would be experienced in inducing their proprietors to keep them in a desirable condition. But in case of any opposition on their part, Government should levy a fine, from such of them as may be unwilling to remedy the evil, in order to devote the sum thus derived to the accomplishment of that purpose.

Q. 6.—There are no such pools or holes.

Q. 7.—The people here drink River Water, which they consider to be pure both in religious and temporal points of view. They get water from the Gunga and keep it for a few days, after which they use it for drinking. Well and Tank Water generally used for culinary purposes, and where the houses are close to the River, its water is freely used on all occasions.

Q. 8.—No other than sinking Wells in the principal Tanks, so as to secure a supply of spring water, and over the town generally, a puckah water-course, such as is to be found in the European part of Calcutta, in communication with the Chaundpaul Ghat Engine, or with others similarly constructed on different parts of the Strand, would afford water sufficiently good for culinary wants over the whole town.

Q. 9.—To the best of my belief, very far from it.

No 5.
 Dukhinanundun
 Mookerjee
 to
 Municipal 2d Sub-
 Committee,
 Choro Baugun,
 20th February, 1837.

Q. 10 and 11.—There is no cultivation.

Q. 12.—I know of none in this neighbourhood.

Q. 13.—The Huts are much too closely built. There is danger both of fire and illness. I am not aware of any insuperable difficulty in their removal, though I conceive that the proprietors would justly claim a remuneration for the loss they would sustain by such removal.

Q. 14.—Not in this neighbourhood, though elsewhere *it is* an objection of weight.

Q. 15.—Several roads might be constructed with decided advantage in the space between Loll Bazar and Necintolah Street, conducting from the Chitpore Road to the Strand. I recommend the following spots: 1st. From the Fouzdary-balakhana. 2d. From Mutchooa Bazar. 3d. From Mooktaram Baboo's Street. 4th. From Rooplall Mullick's.

Q. 16.—Matted and grass-roofed, though the tiled and mud-walled are the safest, as being less liable to fire.

Q. 17.—There are three Shockere, Mutchooa and Madhub Dutt's—Fish, grain and vegetables are the principal commodities. They are not more offensive than the common Bazars of Calcutta, which, with few exceptions, want great improvement. There should be a responsible and stipendiary superintendent for every five or six Bazars.

Q. 18.—Not to my knowledge. Excrement, &c. are carried off by carts and baskets to the river. But this ought to be done only late at night. Other filth is thrown on the Road, and taken away by the Scavengers, though not quickly in the smaller Lanes, where it is suffered to remain for days.

Q. 19.—Yes—Matted and grass-roofed. They are generally kept clean, so they are not offensive.

Q. 20.—Every house has its Privy. In the larger houses, they are well kept; but many are placed directly over the Public Drains in smaller houses, and scarcely cleaned at all. This of course is bad.

Q. 21.—In Public Roads the carcasses are removed by the Scavengers, in Lanes they are sometimes suffered to lie and vitiate the atmosphere.

Q. 22.—I know of none particularly so.

Q. 23.—There is no Burial ground in this quarter.

Q. 24.—Fever, Ague, Dysentery, Hydrocele, and Rheumatism. I cannot say to what extent Inoculation has been introduced.

Q. 25.—The breaking up of the rains.

Q. 26.—Miasma from the low and marshy nature of the soil and density of of population, preventing the free circulation of air. I am not aware of any spot preferable to any in respect to salubrity, were there a more free ventilation from the removal of Huts and lowly crowded Houses.

No. 5.
Dukhinanundun
Mookerjee
to
Municipal 2d Sub-
Committee,
Chore Baigan,
20th February, 1937.

DUKHINANUNDUN MOOKERJEE.

6.—ANSWERS OF SHIBCHURN THAKOOR, DHURMAHATTA.

Q. 1. and 2.—As far as I have been able to observe the Drains of the Dhurmahatta Street, upon which my house is situated, are generally kept clean and open, but there are several Drains in narrow Lanes adjoining the Dhurmahatta Street and others, more privately situated, which seem to be much neglected, are full of filth, and produce offensive smells.

No. 6.
Shibchurn Thakoor
to
Municipal 2d Sub-
Committee,
Dhurmahatta, 10th
March, 1937.

Q. 3.—I believe it is the duty of the people of the Police in the Conservancy Department to keep the Drains in order, and that duty is usually performed by them before the commencement of the rainy season, and as often as necessary in the Drains of the Public Roads and Streets, but not in those of the narrow Lanes.

Q. 4.—The quarter in which I reside, and where I carry on business, is not subject to be flooded, even if it rains uncommonly much.

Q. 5.—There are two Tanks in my neighbourhood, both on the side of the Strand; one to the South of the new Mint, which is in excellent order, and the other to the South of the late Baboo Gopeemohun Tagore's Ghant at Pathoriaghata, which is extremely out of order, and being a receptacle of filth must necessarily produce nauseous smells. There is also a Tank at Munsatollah and two others, one to the East of Baboo Luckinarain Mookerjee's House and the other behind the Thanah of Jorabagan, which, although they do not come exactly within the limits of my neighbourhood, yet I cannot allow this opportunity to escape without representing to the Fever Hospital Committee, that they are kept in a very filthy state.

Q. 6.—I am not aware of any such pools, or holes in my neighbourhood.

Q. 7.—The River Water is always made use of in my family for drinking and culinary purposes, and we have always found it wholesome after it is purified with alum, and sometimes red hot iron passed into it. We keep in store a certain number of jars filled with the River Water in the month of February or

No. 6.
Shibchurn Thakoor
to
Municipal 2d Sub-
Committee,
Dhurmahatta, 10th
March, 1837.

March to provide against its brackish taste, and muddiness, which becomes in the months of April and May of the former quality, and in the rainy season that of the latter.

Q. 8.—I think our neighbourhood would be better supplied with water, if there were a large Pond or Diggee dug on the ground in front of the house of the late Baboo Hurrimohun Tagore, or if the Tank at Munsatollah were enlarged and improved.

Q. 9.—The Wells in our quarter are generally cleared once every year, and are kept clean and free tolerably well, but their water, however clean it may appear, is not of good taste nor wholesome.

Q. 10.—There is no cultivation in my neighbourhood.

Q. 11.—None.

Q. 12.—There is no rank jungle or wild vegetation in my neighbourhood.

Q. 13.—The Huts and Houses of the Native Inhabitants are generally in dense masses, particularly in our neighbourhood in Burra Bazar and the parts adjacent to it,—these being the most populous and commercial parts of the Town. It would be desirable to open new Roads and Lanes to admit of free ventilation, but the difficulty that would be experienced in doing so, is the same which generally occurs, and has always occurred, in such undertakings of public good. I mean the demolition of many of the native dwelling houses of ancient families, and the expenses necessarily attending such a course, especially at Burra Bazar and its vicinity, where the value of ground is in general very high.

Q. 14.—I am not aware of any houses in my neighbourhood, which can be called totally ruinous or uninhabited: but there are certain spots of ground overgrown with wild trees and partially covered with filth, which are in some measure injurious to health.

Q. 15.—I would suggest that several cross roads be opened from the Chitpore Road, to the Dhurmahatta Street, again from the latter to the Strand, and also at several other places. The street leading from the Chitpore Road at Jorasanko to the Dhurmahatta Road, has many windings in it. It would be much desirable to open a communication between that point of it which ends near the Boituckanah of the late Rajah Sibchunder Roy, to the eastern end of the Lane, from the house of Baboo Bustomdoss Mullick; another new Lane opened in conjunction with the one to the South of Dewan Radhakissen Bysack's residence, and extended to the Chitpore Road, and also the widening of the labyrinth narrow Lane called Seeboo Thakoor's Lane and of the Hospooker Lane, the filth and stench of which are notoriously known, cannot fail to be unhealthy to the neighbouring inhabitants. There are likewise no public communications between the Dhurmahatta Street and the Strand, except at Nimtollah and Burra Bazar, at Meer Buhur Ghaut, and in the

intermediate distance, the passage is through private property. I would therefore recommend that two traverse roads be opened, one to the North of the new Mint and the other somewhere at Pathooriaghata, say to the South of the late Baboo Gopeemohun Thakoor's Poosta: the opening of another straight new Lane through Jorabagan from the site of the old Thanah, to the Nimtolah Street, broad enough for a carriage to pass, is also likely to be attended with great advantage, and another wide Lane from that where Baboo Bustomdoss Mullick's House is situated to the Pathooriaghata Street, through Munsatollah, is also highly desirable.

No. 6.
Shibchurn Thakoor
to
Municipal 2d Sub-
Committee,
Dhurmahatta, 10th
March, 1837.

Q. 16.—The mud-walled Huts thatched with straw, are generally considered by Natives, as the best and most healthy abodes, but the tiled-roofed are more preferred within the Town.

Q. 17.—There are two Markets in my quarter, one on the Poostah of the late Rajah Sookmoy Roy Bahadoor, and another at Meer Buhur Ghant, called Rajah of Burdwan's Bazar, both of which I believe, are not kept in very good order, and consequently are in some degree offensive to the immediate neighbourhood. Fruits of different sorts, especially the popular fruit of India, I mean mangoes, are sold in great abundance in the first mentioned Bazar, and also spices and other goods and vegetables, &c. are sold in both of them, but there are no Butcher's-shops in any of them that I am aware of.

Q. 18.—It is the duty of the owners to see that the Markets are kept clean. The filth of the Native Houses in this neighbourhood is generally removed from the compounds, and deposited on the sides of the Public Streets, or Lanes, whence it is always carried away by the Public Carts belonging to the Police Conservancy, almost every day, or as often as may be found necessary.

Q. 19.—There are several Tutties or Privies in our neighbourhood,—there are two ranges to the East of the Dhurmahatta Street, opposite the New Mint, on that tract of ground which belongs to the Nabob of Moorsheedabad, which are generally kept clean, and are tolerably free from bad smells, but there are some Tutties on the Poostah of the late Rajah Sookmoy Roy and some on that of Baboo Doyalchund Addy—(the latter now under charge of the Receiver of the Supreme Court), and also some, I am told, in the Rajah of Burdwan's Bazar, all of which are not kept in a cleanly state.

Q. 20.—On the spot of ground lying between the House belonging to Rajah Nursingchunder Roy, and to me, there are several Huts, occupied by Petty Ryots, and others similarly occupied to the East of the Dhurmahatta Street, fronting the Juggernaut and Ramsitta Ghauts, in both of which places there are private Privies, and although the carrion is removed almost every day by Mehturs, who are paid by a subscription made among the persons who frequent those Privies, yet they are generally in a filthy state, and offensive: the number of such Privies is in the proportion of one to three or four.

No. 6.
 Shibchurn Thakoor
 to
 Municipal 2d Sub-
 Committee,
 Dhurmahatta, 10th
 March, 1837.

Q. 21.—It is a rare occurrence to see the dead bodies of animals in our neighbourhood, as they are always removed by Scavengers, and consequently no nuisance is occasioned on this head.

Q. 22.—Uncleanliness, want of exercise, and too much exposure to the sun and dews, appear to me to be the most predominant bad habits among the Natives to which the generality of the people are subject. Long fastings, over-loading the stomach without dividing the quantity of the meals at certain proper times, are also habits injurious to health; and there are several others, which however seem to be more connected with religious, than national habits, I have therefore thought proper not to mention them.

Q. 23.—There are no Burial Grounds in my neighbourhood.

Q. 24.—The most prevalent diseases among the Native population are the Cholera Morbus and Fevers of different denominations, which commit terrible havocks among them, and also running, piles, dysentery, costiveness, burning of hands and feet, acidity in the stomach, pains in the sides and chest, small-pox, water-pox and other cutaneous, eruptions of various descriptions, to all of which most people are subject in some degree or other. The system of inoculating children at an early age seems to be a very ancient practice in our neighbourhood, and the result has been generally beneficial.

Q. 25.—Almost all changes of the weather appear to be unhealthy to the Natives, but the period between the latter end of August to the middle of November is considered as the most unfavorable to health.

Q. 26.—I am not aware of any other general causes of unhealthiness or discomfort, than those already stated, with the exception of the non-watering of the Streets in the Native quarters as regards the latter, nor do I know of any peculiarly healthy situation in our neighbourhood, the singularities of which claim any particular remark. I would however take the liberty to suggest that your Committee should extend these enquiries to the Suburbs of Calcutta also, and remedy the nuisances which may appear to them to exist in those quarters.

SHIBCHURN THAKOOR.

The 10th March, 1837.

7.—ANSWERS OF KASIPRASAD GHOSH, SIAM BAZAR.

No. 7.
Kasiprasad Ghosh
to
Municipal 2d Sub-
Committee,
Sham Bazar, 20th
March, 1837.

Q. 1.—They are I should say generally neglected and suffered to get choked up, as it is, but once every year before the rains, that they are cleaned, and when cleaned, the vegetable and earthy matter instead of being removed is deposited on their borders.

Q. 2.—They are generally in an offensive state, in the native part of the town, in consequence of all sorts of dirt and filth that are thrown in them. Those who are employed under the Conservancy Department to prevent it, connive at it for a trifling pecuniary consideration, most of the common people and servants of native gentlemen, resort to them for the purpose of daily evacuation. It is only in very few houses that the accommodation of a Privy for servants is provided with, and the Thanadars and Chowkeedars who receive fixed presents of money at stated periods (on holidays and other occasions) would not annoy Masters of houses by arresting their servants and bringing them before the Police authorities for punishment.

Q. 3.—I am not aware that there is any particular individual whose sole duty is to keep the public Drains in order, the management of which is vested in the Conservancy Department, which employs Constables to inspect them, and *Dhangars* to clean them once every year, under the superintendence of Police Peons. The Constables alluded to perform all the duties connected with the Conservancy Department.

Q. 4.—There are many spots in my neighbourhood (Sham-bazar) and indeed in the native part of the town, which, during the rains, are completely filled up with water, which serves people for the purposes of bathing, cleansing and evacuation. These spots are lower than the roads, either because people in the neighbourhood have dug up earth to build their huts or houses, or for other purposes, or because the roads have been made higher with the earth procured from them. Many of the Drains do not admit of a free passage to water, either because they are not sufficiently clean, or running as some of them do, through the premises of the natives, are dammed up by them, to prevent their compounds being flooded over. The latter circumstance is a hardship both to the residents of such houses, and to the people of the neighbourhood, which, in consequence of the course of water during the rains, being thus stopped or checked, is not only subject to be flooded over, but continues for that period in a very offensive state, owing to the decomposition of vegetable and other matter that is washed away by the water. The plan also which is adopted by the Police authorities of filling up low spots of ground under their management with rank vegetation, no less contributes to render their neighbourhood very disagreeable. Last year a part of the Marhatta Ditch was filled up in this way.

Q. 5.—I have no Tanks belonging to me.

Q. 6.—Many such pools wherein filth accumulates may be seen in Sham-bazar, Bag-bazar, &c.

No. 7.
Kasiprasad Ghosh
to
Municipal 2d Sub-
Committee,
Sham Bazar, 20th
March, 1837.

Q. 7.—The natives use any water that is nearest to them, for bathing and cleansing, but they would go to a short distance for better water (if such is obtainable) for culinary purposes and drinking. The state in which water is used for drinking and cooking by the generality of natives, be it Tank, Well or River Water, is in my opinion decidedly unwholesome, as it undergoes no operation, in order to make it clean and pure.

Q. 8.—I think it would be advisable for the supply of better water to the people than what they now use, to excavate large Tanks like those that have been already dug by Government, at convenient distances from each other, and to fill up, or cause to be filled up, all the smaller ones, unless they are kept clean and free from nuisance.

Q. 9.—There are but very few Wells or Tanks that are really kept clean and free, so as not to be offensive. Wells and Tanks which are not lowered sufficiently deep, are offensive of themselves, as the water in them is what the earth saturates during the rains, and consequently of a greenish color, and brackish taste, it being impregnated with vegetable and other matter.

Q. 10.—In the neighbourhood in which I reside there is no cultivation. In the environs of Calcutta rice is cultivated. These fields are kept clean that the plants may thrive well and vigorously, and I do not think cause any unhealthiness.

Q. 11.—I do not know of any deleterious crops being cultivated, in or about Calcutta.

Q. 12.—There are many little spots abounding with wild, and rank vegetation, in Sham-bazar and Baug-bazar, in Calcutta, and on both sides of the Dum-Dum and Barrackpore Roads, which I conceive to be so many sources of malaria and disease, and ought therefore to be immediately removed.

Q. 13.—The huts I think are sufficiently separated from each other, so as to admit of a free ventilation, but the houses are not so. The mode in which the former are built, naturally makes them at short distances from each other, but the plan of building houses being quite different, they are in very many instances so close to each other, that there is not more than three inches of space between them. In such a case to open out a Street or Lane will not only seriously injure the houses, but also expose the inner apartments appropriated to females, which might be an objection of some importance to the measure contemplated.

Q. 14.—There are many such.

Q. 15.—Instead of making new Roads, I would recommend all narrow Lanes and Passages, to be sufficiently widened, so as to occasion a free circulation of air.

Q. 16.—The mud-walled and grass-roofed hut, is certainly preferable, but the natives have no other distinct notion of the utility or healthiness of the different kinds of huts, excepting their security.

Q. 17.—The Markets that are nearest to my residence, are those of Sobha-bazar and Sham-bazar, and one or two others of smaller note, where fish, vegetables, and other articles of daily consumption amongst the natives are sold. They are kept in order, but not in that high state of cleanliness in which such places should be kept : any man who passes by them is sure to inhale bad odours.

No. 7.
Kasiprasad Ghosh
to
Municipal 2d Sub-
Committee,
Sham Bazar, 20th
March, 1837.

Q. 18.—I do not know there is. The filth of the native houses generally accumulates to large heaps, when they are removed to the streets, where it sometimes continues for four days, and whence it is then taken away by the Police people, and used for filling up Tanks, &c. The Conservancy carts do not visit all the Streets and Lanes in the native part of the city every day, as they do in the European part.

Q. 19.—There is no public Privy in my neighbourhood, but I have known of such Privies, which are generally not very clean, and are therefore offensive.

Q. 20.—Almost every native house has a Privy ; some have two, some three and some even more, but none of them, excepting those that border on the public Drains, are ever cleaned. Privies, whether cleaned or not, are offensive in some degree at least.

Q. 21.—The dead body of an animal is generally left on the Street, whence it is removed to the River, either by the Police people, or at private expense. It continues there for several days, sometimes in a very offensive state, and unless the Police people remove it, or the birds and dogs eat it up, the neighbours have it removed.

Q. 22.—There are many native habits, which are injurious to health. Their mode of living and their scruples as to the purity and impurity of a thing, lead them to contract such habits, as to subject them in a short time to diseases.

Q. 23.—The burying grounds I should consider are kept in good order by Government.

Q. 24.—The most prevalent diseases among the natives are the fever, the cholera, dysentery, and the small-pox. Inoculation does not extend to all the lower orders of the people, but all the higher classes undergo the operation under Brahmins, who profess the art, and generally with better success than others.

Q. 25.—The close of the rains is the most unhealthy part of the year ; and the approach of summer is next to it.

Q. 26.—The dustiness of the Roads and Streets, is a source of great discomfort to the inhabitants.

KASIPRASAD GHOSH.

Calcutta, 20th March, 1837.

No. 8.
 Russick Chunder
 Neagy
 to
 Municipal 2d Sub-
 Committee,
 Baug Bazar, 31st
 March, 1837.

8.—ANSWERS OF RUSSICK CHUNDER NEAGY, BAUG-BAZAR.

Q. 1.—The present Drains of our neighbourhood are always kept unopened, and no care is taken to prevent from its being choked up.

Q. 2.—These Drains when kept clear from every kind of filth, do not at all exhale offensive effluvia, but the passengers cannot pass without injuring their noses, on account of the excrements on both sides.

Q. 3.—To keep these Drains in regular order is incumbent on the Peons appointed by the Police, who are very wicked and irregular.

Q. 4.—Water does not lodge in any part of our neighbourhood for a great length of time. During the rainy season in some places it stands for a while, but soon subsides, leaving some muddy substances on the surface, which are very offensive and injurious to the passengers.

Q. 5.—Our quarter abounds with a great many old Tanks, almost all of them situated on the Ramcaunt Bose's Street, whose stench is like that of a corrupted corpse, nor their sides and banks are ever repaired.

Q. 6.—There are no such pools or holes (as far as I am informed) in our neighbourhood.

Q. 7.—We generally use water from the Ganges, both in drinking and cooking, and it is very wholesome and favourable to our health.

Q. 8.—The Gunga water being very salubrious, we need not the supply of any other water, except in the months Shrabone and Bhauder, and Choiter, Bysack and Joisty, when the water becomes very muddy and saltish.

Q. 9.—The water of the Ganges is universally used in our neighbourhood, and no one uses the Well water, except in cases of cleaning the utensils, in consequence of which it is always kept clean, and far from every kind of filth.

Q. 10.—There being no sort of cultivation in our neighbourhood, we are blind to the effect.

Q. 11.—There are some sorts of crops cultivated in different seasons of the year, that almost all of them, if I mistake not, are considered by the natives to be deleterious, but to meliorate them would meet with no less difficulty, either in pecuniary expense, or bodily labour. And in the mean time, though they are deleterious, still they are wholesome to some people who are concerned in cultivating them.

Q. 12.—There are no other jungles in our neighbourhood than one, which extends all along the eastern part of the house No. 23 Baug-bazar Street, commenc-

ing on the north from the general road and ending nearly to the Ramcaunth Bose's Street, on the South.

No. 8.
Russick Chunder
Neagy
to
Municipal 2d Sub.
Committee,
Baug Bazar, 31st
March, 1837.

Q. 13.—The huts and houses in our quarter, are situated so closely, that they do not admit of free ventilation, and in consequence of the limited circumstances of the inhabitants of this division, a great difficulty would be experienced in opening Streets and Lanes through them, but the assistance from the Government can set aside every kind of opposition.

Q. 14.—There are several houses of this description in our neighbourhood, that some of them being left unoccupied from a distance of time, and others on account of the pecuniary need of their owners, have been suffered to be run over by rank weeds : and they are by every means injurious to health.

Q. 15.—No such Roads are required to be constructed, but great advantage will accrue from the reparation of the retired lanes, and crooked streets, in order to make way for the Scavenger's carts.

Q. 16.—The lower order of the natives of this neighbourhood, prefer the straw huts, to the tile-roofed. As the former are in all seasons conducive to their health, but the latter is very injurious in summer.

Q. 17.—There is only one Market in our quarter, which is always kept clean and in good order. The Grocers of this Bazar, sell different kinds of vegetables and fishes, except Butcher's meat.

Q. 18.—There is a man appointed by the Market holder to see it cleaned up every morning. The filth is generally deposited by the Natives before their house whence the Scavenger's cart take away, either to fill up some useless Tank, or throw it to some remote place from the Town.

Q. 19.—There is one or two public matted walled Privies in our division which is cleaned once every morning, and is therefore by no means offensive, and besides there are some peculiar spots situated in Ramcaunth Bose's Street, appropriated to the same end, which are very injurious to health.

Q. 20.—Every one has got one or two private Privies, appropriated to the use of his own family, which is once a week, or two, cleaned, and is therefore by no means offensive ; that some of them being exactly situated on the border of the retired Lanes, become so injurious to health, that people, especially in the rainy season, cannot pass without being injured, and are very injurious and offensive all the time.

Q. 21.—If a domestic animal of inferior order, such as a dog or cat die, it is generally thrown on the Public Road, but the dead body of higher nature, such as a cow, or horse, is thrown into the Ganges through hired men.

No. 8.
 Russick Chunder
 Neagy
 to
 Municipal 2d Sub-
 Committee,
 Bang Bazar, 31st
 March, 1837.

Q. 22.—There are several native habits with regard to drinking, sleeping and dining, &c. which I conceive are very much injurious to health.

Q. 23.—There being not a single tract of burying ground in our quarter. We are quite ignorant of its particulars.

Q. 24.—The prevalent diseases among the Natives are following: Fever, Cholera Morbus, Consumptive Cough, Gout, Itch, Dyrrhoea, Headache, Spleen, Bilious Disorders, Polypus, Gonorrhoea, Hypochondria, Hydrocele. Inoculation among the Natives of this country as I have witnessed, is done by infusing a few drops of pus in some peculiar parts of our hands, a substance procured from human body, when it is subject to Small Pox.

Q. 25.—The months Shrabone and Bhadur are considered by the Natives to be the most unhealthy, as it is in this part of the year that every kind of disease becomes prevalent.

Q. 26.—There is no other source of unhealthiness than what has already been stated, except that they do not observe the regularity of time in eating and drinking.

RUSSICK CHUNDER NEAGY.

Calcutta, Bang-Bazar, 31st March, 1837.

No. 9.
 Kissenchunder Dutt
 to
 Municipal 2d Sub-
 Committee,
 Calcutta, 15th June,
 1837.

9.—ANSWERS OF KISSENCHUNDER DUTT, RAMBAGAUN.

Q. 1 and 2.—The Drains in the Native part of the Town, are all, more or less neglected, when compared with those in the European part of the City; they are not however entirely choked up, nor in general particularly offensive.

Q. 3.—I am not aware whose duty it is, to keep them in order.

Q. 4.—Nor do I observe any place in this neighbourhood, which is subject to be periodically flooded.

Q. 5.—One of the principal items, to which I would wish to draw the attention of the Committee, is the absence of a single reservoir of wholesome water, in this neighbourhood.

Q. 6 and 7.—There are numerous filthy ponds, which supply the poorer classes with water, for culinary and other purposes. The Natives are too indolent to procure water, from Cornwallis Square, the nearest public Tank. I may add that habituated to take water from the nearest Tank, almost no consideration will induce a Native to relinquish it, for the water of a fresher pool at a distance.

Q. 8.—Large Tanks should be dug, if funds could be obtained.

Q. 9.—They are.

Q. 10.—I do not think any unhealthiness is occasioned by cultivation.

Q. 11.—(None.)

Q. 12.—No rank jungle hereabouts.

Q. 13.—The huts and houses of the Natives, are not sufficiently apart, to admit of free ventilation, and I believe no difficulty would be experienced in making the requisite Streets and Lanes.

Q. 14.—There are none.

Q. 15.—I would recommend two Roads, running East and West, to be made in the Native part of the Town.

Q. 16.—(None.)

Q. 17.—The Markets are tolerably clean.

Q. 18.—The filth of houses is seldom cleaned.

Q. 19.—No public Privies—private ones seldom cleaned.

Q. 20.—(None.)

Q. 21.—I think this part of the duty well performed. I seldom see a dead animal lying in the Streets in this neighbourhood.

Q. 22.—See answer to 26.

Q. 23.—No Burying Ground in this neighbourhood.

Q. 24.—Fever, Dysentery, and occasionally Cholera Morbus. Inoculation has been introduced, but strange to say, there is a prejudice against it amongst the higher orders.

Q. 25.—The season after the Rains.

Q. 26.—I consider the following Native habits most deleterious to health :

1st. Their mode of crowding a house.

2d. Their sleeping on the ground-floor.

3d. Their use of unclean water for drink, and culinary purposes.

4th. Their treatment of women after delivery.

KISSENCHUNDER DUTT.

Rambagaun, 15th June, 1837.

No. 10.
S. Clarke
to
Municipal 2d Sub-
Committee,
Calcutta, 1st Feb.
1837.

**10.—S. CLARKE, OVERSEER OF THE STRAND ROAD,
CALCUTTA.**

Q. 1.—In my Division the Drains are kept open and clean all the months in the year.

Q. 2.—Sometimes when the inhabitants allow the filth, and filthy water of their Privies to run into them.

Q. 3.—By European Overseers, and Coolies, Mehters, Bheestees, &c.

Q. 4.—I live in Dacre's Lane, the places there are never flooded.

Q. 5.—No Tanks in my Division.

Q. 6.—Deep Drains, which are generally covered over with planks, and rubbish, when opened to be cleaned once a month, are, in all parts of the Town, very offensive and unhealthy.

Q. 7.—Tank Water with Europeans, and River Water with Natives.

Q. 8.—None.

Q. 9.—I am not allowed to interfere with private Tanks.

Q. 10.—None.

Q. 11.—I am not aware, as I live in Town.

Q. 12.—Both very injurious to health, when situated near a dwelling house, or hut.

Q. 13.—They are too close built together, in many parts of the Town.

Q. 14.—Almost in every Street in Town, and often become common Privies.

Q. 15.—Yes, from Beboe Ross's through the heart of the Burra Bazar, up to Chitpoor Road, and from thence up to the Central Road—a part of the Town which is very unhealthy.

Q. 16.—The matted is by far the best.

Q. 17.—In my Division there are a number of Market places, for Fish and Vegetables—those places are generally very filthy.

Q. 18.—The proprietors of Markets generally keep a person to look after it, generally by Mehters.

Q. 19.—None where I live.

Q. 20.—There are a sufficient supply of those places in my neighbourhood, and generally clean.

Q. 21.—Sent to the River, and there sunk by means of ropes and stones.

Q. 22.—Making water in the public and private drains.

Q. 23.—I am not aware.

Q. 24.—I cannot say.

Q. 25.—The cold season, and the breaking up of the rains.

Q. 26.—I am not aware.

(Signed) S. CLARKE,
Overseer, Strand Division.

Calcutta, the 1st February, 1837.

No. 10.
S. Clarke
to
Municipal 2d Sub-
Committee,
Calcutta, 1st Feb.
1837.

J 11. *J*. TWEEDALE, OVERSEER OF THE 1ST DIVISION,
CALCUTTA.

The Drains are not neglected, but from the very slow run of water, excepting after heavy falls of rain, a great deal of mud is collected in the Drains and Bridge, at the end of the rainy season, after which, till the mud is dry enough to be taken out by the Khodalee, the Drains have to be kept clear, principally by Coolies dragging rollers of straw, or brush-wood through them.

Q. 2.—They are not free from bad smells, and the cause is that almost every house has its Privy on the Drain if possible, besides through the remains of meals, peeling of fruit, &c. are generally thrown into them, which ferment, and cause bad smells.

Q. 3.—It is the duty of the Overseer to see the Drains kept in order. Coolies, Melters, Carts, &c. are daily mustered, for cleaning out the Drains, and carrying away the filth, and rubbish, from the Roads, and Streets.

Q. 4.—In the northern division, water lodges, in Chitpoor Road, at Sidarparra, and at Nimtollah Street, in Mooktaram Baboo's Street, at Chore Baugan, in Matchowa Bazar, Sookeas and Amherst Streets. After a heavy fall of rain, the water remains for some hours, but these spots are no otherwise offensive, any further than that they are an inconvenience to persons who have to pass, or repass, when they are flooded. The Drains running east, are entirely too small to carry off the water quickly after heavy rain.

No. 11.
J. Tweedale
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

No. 11.
J. Tweedale
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

Q. 5.—There are but three public Tanks in the division, and the water of only one, (that in Cornwallis Square,) is used for drinking and culinary purposes, and that is said to be bad ; there are many private Tanks, but they are not generally kept in proper order, their sides are frequently neglected, and they are often allowed to be overgrown with vegetable matter.

Q. 6.—There are a great number of pools and holes in the division, many of them, rank with vegetation. On the south side of Ruttoo Sircar's Garden Street, close to the Chitpoor Road, there is an old Tank that has a public Tattie on it. The filth is never removed, so that it is now nearly filled up by it : it is a very serious nuisance. In Ramkaunt Bose's Street, there are offensive holes. In Ballakanah two holes. When Tatties stand on they are in a bad state. In Baniatollah Street there are some bad holes. Besides there are large holes for keeping cowdung, which is let into the Drains at the convenience of the owners, and does much injury to the run of the water.

Q. 7.—I think it is generally Tank water that the poorer classes use. Some good Tanks are much wanted.

Q. 8.—Some good Tanks are much wanted in the northern part of the Town.

Q. 9, 10 and 11.—(None.)

Q. 12.—In Bang Bazar, on both sides of Chitpoor Road, in Jaleatollah, Gowah Baugan and Sookeas Street, there is a good deal of jungle and rank vegetation, principally about old pools or holes.

Q. 13.—The Huts of the Natives are in many places entirely too close to admit free air. The Natives can best say how it can be remedied.

Q. 14.—There are some old houses, with jungle about them, and many with trees growing out of the walls. There are, however, but very few totally uninhabited, that I am aware of ; they are receptacles of filth, as people frequently retire to them, but I am not aware that there is any annoyance caused by carrion.

Q. 15 and 16.—None.

Q. 17.—There are several Markets in the Division, principally for Fish and Vegetables, they are indifferently cleaned, and the Drains where they are situated, smell very much, especially in the hot season, and in the fore part of the day.

Q. 18.—There is I believe, always a Mooktar or Sircar, to see the Market cleaned. The people are much in the habit of cleaning out their houses at certain times in the year, as before holidays, &c. It is generally laid upon the Street but frequently pushed through the Drains of the houses into the Street Drains, it is then removed by the Conservancy Carts, and deposited in old Tanks or holes available for that purpose.

Q. 19.—There are several, but not by any means a sufficiency, they are very far from being kept clean, and as they are on private property it is not easy to prevent the nuisance. When the filth runs into the Drains, as is frequently the case, the proprietors are sometimes fined, and sometimes the people in their vicinity complain by petition against them.

No. 11.
J. Tweedale
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

Q. 20.—Almost every pukka house in the Northern part of the Town has its Privy on the Drain—very often the Street Drain, but generally the one in rear of the house. These Privies are never cleaned, unless the owners are forced to do it to let the Coolies cut the Drains. The people depend upon the rains to clear away the filth accumulated during the dry season, and consider it a very great hardship when forced to clean it away to let the Coolies work. The richer and more respectable natives set the example, which is of course followed by their poorer neighbours, who, although they suffer much annoyance from Baboo's Privies for family and servants, do not complain, as they are themselves guilty, though in a less degree. Most of those who have nuisance in the Drains have been brought before the Magistrates, and occasionally fined. Their general plea is, that it is an old custom, and that their houses are so built that the filth must run into the Drains. The Privies on the Street Drains are hardly ever regularly cleaned, and they often get so full of filth, as to burst the doors open, and create shameful nuisances in the Street, and very often the owners themselves, or their Mehters let the filth run into the Drains to get rid of it, but when a Privy stands on a Drain, in rear of the house, the filth is constantly allowed to run into it. This is a great inconvenience, for in many places patches have to be left uncut in Drains, until those who have nuisances clear them away.

Q. 21.—The dead bodies of animals are carried to the River by Domes, four of whom and a Sirdar, are attached to the Division for that purpose, and the Overseer sees that duty done. They are then taken out to the middle of the stream in a boat, and allowed to float away. There is no nuisance but what must be unavoidable, as in the case of sickly cattle straying into concealed places, and dying there, and remaining sometime before discovered. The people are much in the habit of turning out sickly cattle to die on the Street, or wherever they may chance to stray to.

Q. 22.—(None.)

Q. 23.—There are none in the Upper North Division of the Town.

Q. 24, 25 and 26.—(None.)

(Signed) **J. TWEEDALE, Overseer,**
Upper North Division.

No. 12.
R. McCulloch
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

12.—ANSWERS OF R. McCULLOCH, OVERSEER OF THE 2D DIVISION, CALCUTTA.

Q. 1.—Always kept open, are daily attended to, and every exertion made to keep them clean.

Q. 2.—In offering my opinion on the state of the Drains, and in answer to the several queries which I am called upon to reply to, I respectfully beg leave to state, that I confine my answers to the Lower South Division, which is immediately in my charge as Overseer. In general, pretty free from bad smells, particularly the main ones, considering the customs of natives.

Q. 3.—The Overseers, of whom there are four, the Town being divided into as many Divisions, under whom are placed a certain number of natives, together with carts, &c.

Q. 4.—Several places are subject to be flooded on a heavy fall of rain, particularly the old Mutchá Bazar Road, which I attribute to the great rush of water from the smaller into the main Drains which empties itself into the Mahratta Ditch, and from thence into the Canal, I have seen the old Mutchá Bazar Road flooded for hours, after a heavy fall of rain, I consider does more good than otherwise, as on its getting vent carries off all impurities that may have settled in the Drains.

Q. 5.—The Public Tanks are kept remarkably clean, are well attended to, and their embankments kept in repair.

Q. 6.—There are several, particularly in the Mutchá Bazar, and Soorty Baugan. Europeans would consider them causes of disease, but are not considered so by the Natives, as they are resorted to by them, both for bathing, and washing their linen, and culinary purposes.

Q. 7.—The Hindoos prefer the River water, and bring it themselves, or purchase it from the bangy, or water carriers if able; the Tank water is more used by the Mahomedans, who purchase it from Bheesties, and if the Tank is near their habitations they bring it themselves. For drinking or cooking, few Wells are resorted to, water being generally "salty" or brackish, the Natives do not consider Well water even wholesome for bathing.

Q. 8.—I consider the greatest benefit that can be conferred on the residents of the Mutchá Bazar Road and its neighbourhood, would be a large Tank, exclusively for drinking, similar to the Potuldangah Tank, and to be kept and attended to in like manner.

Q. 9.—The Wells are generally not attended to, until the owners find the Water decreasing—they are then cleaned out by a class of men who obtain a livelihood in this manner, their charge is from 6 to 8 Annas, or more, according to the depth of the Well.

Q. 10.—I do not know of any place cultivated in my Division, except small Flower Gardens, and which I do not consider unhealthy.

Q. 11.—This query is answered in No. 10.

Q. 12.—There is a little in Mirzapore and Soorty Baugan Divisions, but I do not consider it a cause of disease.

No. 12.
R. McCulloch
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

Q. 13.—In general the Huts are much crowded, and not sufficiently separated to admit of a free circulation of air, particularly so in the neighbourhood of a Tank, such places being much sought for by the poorer classes, as a saving for the purchase of, and trouble in bringing water from a distance. I think difficulties would be experienced in attempting to open Streets and Lanes through them on the part of the owners of the grounds, the latter never study the comfort or health of their Tenants, and are much opposed to any innovations or interference on the part of Government.

Q. 14.—There are a few ruinous houses, but not receptacles of filth or carrion, or grown up with vegetation; the natives do not appear to consider the latter injurious to health, although it may be a remote cause of unhealthiness to those immediately residing in its neighbourhood.

Q. 15.—If a Tank was cut in the Mutchu Bazar, I should recommend a new Road being opened midway, running South, so as to open or end in Collootollah, or branch off into Lanes, reference to the Map of Calcutta, would better explain the line to be opened. It should be parallel to the Chitpoor and Pottul-dangah Roads. I believe the entrance from Chitpoor Road into Mutchu Bazar Street, and a considerable way up "East," is private property, the Western entrance is very narrow, and will hardly admit two Buggies passing.

Q. 16.—Tiles are considered the most safe from fire, and grass the coolest, the latter the healthiest; the same reason applies to the walls, as the roofs.

Q. 17.—There are several Bazars,—the largest, and most resorted to, are the Tiretta and Baboo Madub Dutt's; in the former Butcher's meat, vegetables, fish, &c., are sold; in the latter fish and vegetables only are sold: the former is kept in a dirty crowded state, the latter in a very clean state.

Q. 18.—No person employed, although I consider such a person absolutely necessary, as it would relieve the Overseer much, and enable him to confine his duties exclusively to the Drains and Thoroughfares; an Overseer of Markets could also see to the Weights and Measures in the Bazar. Filth is thrown out on the Public Streets, which is every morning removed in carts, and is used in filling up stagnant Tanks, on application of the owners of them.

Q. 19.—Several, but are seldom cleaned, until compelled by the Police, the owners have large pools, into which they empty and keep the filth (if not well

No. 12.
R. McCulloch
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

looked after by the Police) until the rainy season, when they cut a Drain from it, to communicate with the Public Drain, and on a dark rainy night generally, let the whole of the accumulated filth run into the Public Drains ; where such an accumulation of filth is kept, they must be offensive—they are necessary evils ; Cess Pools are preferable, but they are liable to fill in the monsoons, and are not much liked by the natives.

Q. 20.—Numerous—generally every pukka built house has one—or more—are seldom cleaned, until the owners are summoned by the Police,—they are more offensive than the Public Privies, and the filth often discharged into the Public Drains.

Q. 21.—They are always removed by the Police Dooks, and thrown into the River. Carts go round exclusively for this duty, which is properly performed—no nuisance occasioned by delay or neglect in removing them.

Q. 22.—Hindoos bathing in the River during the cold weather, and walking home to their houses in their wet clothes.

Q. 23.—There are two Burial Grounds in my Division—the Armenian and Greek ; they are situated to the North of the Tiretta Bazar, and in a confined and crowded neighbourhood ; they appear to be not neglected. I cannot state if they are injurious to health, but I respectfully think they are objectionable as to being in the centre of a densely populated City like Calcutta.

Q. 24.—I believe Fever—I cannot state as to Inoculation, not having observed the effects.

Q. 25.—The commencement and termination of the monsoons, Fever is then I believe the prevailing complaint.

Q. 26.—I am not aware of any which has not been above noticed in detail.

(Signed) R. McCULLOCH, *Overseer,*
2nd or Lower North Division.

13.—ANSWERS OF J. GREEN, 3^D DIVISION, CALCUTTA.**No. 13.****J. Green****to****Municipal 2d Sub-
Committee.
Calcutta, 14th March,
1837.**

Q. 1.—I beg respectfully to say all Drains in my Division are kept open, and as clean as practicable.

Q. 2.—I find the covered Drains generally offensive, and more particularly those in the vicinity of Government House ; why the Drains in this vicinity is more offensive than similar Drains in other parts of the Town, is that the numerous Natives employed in Government Offices, and other large Establishments, make use of them for improper purposes. In most instances, the offensive smell arising from open Drains, is caused by persons having communications from their Privies and Kitchens, to the Drains, to carry off the filthy water, which causes as bad a smell as the actual soil.

Q. 3.—Every Drain in my Division, is cleaned four times every month, and those to the Westward of Cossitollah daily.

Q. 4.—The Roads of Bow-Bazar, Dhurumtollah, and Chandnee Chowk Bazar, are sometimes flooded on the fall of heavy rains, in the months of July and August, in consequence of the spring tides, at the change of the Moon, flowing into the main Drains, but this does not occur, but in those instances, and passes off at the return of Tide.

Q. 5.—There is in my Division the Loll Diggy Tank, or Tank Square, which is in every respect an excellent Tank ; the Wellington Square Tank, the banks of which are in excellent order, but the water is generally complained of, as being brackish—there are a number of private Tanks, among which is the following, which I consider in a bad state, from an accumulation of vegetable matter, which ought to be removed immediately, or the Tanks filled up :

Bow-Bazar Lane,	Ramkanto Baboo,	1 Tank.
Bancharam Unkoor's Lane,	Ramrutton Baboo,	1 Ditto.
Nimbootollah Lane,	Ramtonoo Seal,	1 Ditto.
Ditto,	Shaum Bose,	1 Ditto.
Soorayr Tank Street,	Ramdhone Nundee,	1 Ditto.
Gour Day's Lane,	Bissoo Baboo,	1 Ditto.

Total, 6 Tanks.

Q. 6.—I am not aware of the existence of such places alluded to in my Division.

Q. 7.—The Christian part of the Community in my Division, use Tank water for drinking, and the water from the Aqueduct for common purpose—the Musselmen use the same water for similar purposes, the Hindoos prefer the River water.

No. 13.
J. Green
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

Q. 8.—I do not think better water can be found than the Tanks supplied from the River. A Public Tank in the vicinity of St. James's Church, would be a great accommodation to the Public.

Q. 9.—I am not aware of Well water being used for any, but the commonest of purposes.

Q. 10.—I am not aware of any cultivation in my Division; there are small flower gardens, which I do not consider unhealthy.

Q. 12.—There is nothing of this kind in my Division.

Q. 13.—There is no part of my Division, in my opinion so crowded, as to cause sickness.

Q. 14.—There is a number of Buildings in my Division, in a ruinous state, and in all cases where they are left open, they become a source of nuisance, as Persons go there to ease themselves, and cattle frequently crawl in, to die, and they are more or less, grown over with vegetation.

Q. 17.—There is the Boituckkhanah Bazar appropriated to the sale of fish, fruit, poultry and vegetables,—the Bazar at the corner of Bow Bazar and Wellington Street, called Bow Bazar, for the fish market and vegetables; and Chandnee Choke Bazar, in which all kinds of eatables, grain included, cloth and hard-ware of all descriptions,—there is no other Bazar in my Division, and the above are kept as clean as practicable.

Q. 18.—I am not aware there is any person entertained for the special purpose, I inspect them myself occasionally in my Division; the native community do, generally speaking, keep their compounds clean, the dirt is thrown out on the Public Roads, and removed daily; and in the vicinity of Bazars and Livery Stables, twice a day, by Conservancy Carts.

Q. 19.—There are Public Tattees in the following places, viz.

Meerajohnny Gully, Bow-Bazar Lane, Loll Bazar Street, Shibtollah Lane, Meredith's Lane, Dhurumtollah Road, Goomghur Lane, Bapaurytollah, Nullpooker Lane, Huzzooree Mull's Lane, Boituckkhanah Bazar, two in Emmaumbarree Lane, and three in Chandnee Choke Street, making a total of sixteen; they are generally speaking kept clean. Persons in charge of them, do sometimes allow the filth to accumulate, in which they are invariably summoned and fined.

The Tattee in Meerajohnny Gully has Cesspools, and is in consequence less offensive than any other—Cesspools is a great improvement. I never found any offensive smell from them, and they are nearly 5 years standing; the others have tiled floors, and the filthy water carried into small holes, dug for the purpose; this water is a great nuisance.

No. 13.
J. Green
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

Q. 20.—I consider that two-thirds of the Native community in my Division, have Privies on their premises, and the greater portion of them do not keep monthly servants to clean them, but allow the filth to accumulate till the nuisance is past their bearing, and then let it into the public Drains if possible, or pay persons to carry it to the River. Many persons are brought before the Magistrate of the Conservancy Department every Committee day, to answer charges of having allowed the filth from their Privies to run into the public Drains; in my opinion, the private Privies are a source of greater nuisance in the Town, than the public Tatties, which are controuled by the Conservancy Department, and visited daily.

Q. 21.—There are 4 Domes and a Sirdar, and a covered Cart employed to remove the dead bodies of animals, and kill Dogs in my Division—all dead bodies are thrown into the River—and on an average 120 Dogs are killed in my Division monthly.

Q. 22.—The lower order of Natives are much addicted to drinking both distilled and vegetable Spirits, and chewing and smoking intoxicating Drugs,—this I have a good opportunity of observing in the neighbourhood of Chandnee Choke and Bow Bazar.

Q. 23.—There is no Burial-ground in my Division.

Q. 24, 25 and 26.—The nature of these several questions I am not acquainted with, and know not how to answer them.

(Signed) J. GREEN, *Overseer,*
Upper South Division.

14.—ANSWERS OF E. CAMPBELL, 4TH DIVISION, CALCUTTA.

No. 14.
E. Campbell
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

Q. 1.—The Drains are generally open, and cleaned three times in the week.

Q. 2.—The Drains of the Lower South Division are free from bad smells, except the drainage be stoppt by the height of the 24-Pergunnahs' Drain—there is sometimes bad smells, owing to filthy water coming from Gentlemen's Kitchens.

Q. 3.—The Overseer of each Division's duty is to keep the Drains in order and to see it in effect accomplished—he selects daily a certain number of Coolies and Hackeries for the above purpose.

Q. 4.—These three years back, I abode in my present residence, and had only seen during two rainy seasons, the north end of Free School Street inundated, but no ways offensive, nor prejudicial to health, and only lasted for a night.

No. 14.
E. Campbell
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

Q. 5.—I have the charge of six Tanks in the Lower South Division, and they are kept in excellent order.

Q. 6.—Whenever a Pool appears to be the receptacle of filth, the Overseer endeavours to see it in effect closed up, which prevents disease.

Q. 7.—Europeans usually drink water carried from Tank Square, General Tank, and Free School Tank, as considered the best, but the Natives prefer the Hooghly water,

Q. 8.—As some water is heavier drinking than other water, Nature should instruct where the deficiency lies.

Q. 9.—European Wells are generally kept clean, but the Native Wells are neglected.

Q. 10.—In the Lower South Division there is no cultivation performed, that is any way prejudicial to health.

Q. 11.—The Paddy fields must be always injurious to health, as being inundated, and the water stagnated.

Q. 12.—None in the Lower South Division.

Q. 13.—None.

Q. 14.—In Wood Street there are ancient decayed houses, receptacles of nuisance, grown up with vegetation, which must be injurious to health.

Q. 15.—Colvin Bustie, requires a Road from Theatre Street, to the Lower Circular Road. A Road is greatly required through Fenwick Bazar, from Jaun Bazar Street to Lindsay Street.

Q. 16.—Either are alike healthy, provided the floor is raised 2 feet above the level, and kept clean.

Q. 17.—Dr. Jackson's Bazar is the most extensive Market in my Division, where there is daily exhibited for sale Butcher's Meat, Fish, Vegetables, &c. but notwithstanding, is daily kept as clean as possible.

Q. 18.—It is the business of every Overseer, to see every Market in his Division kept clean, and also to remove any filth or sweepings, thrown out from their compounds, into the Public Roads, daily carrying it to fill up some stagnated Pool or Tank, in the 24-Purgunnahs.

Q. 19.—There are several Public Privies in my Division, and they are cleaned daily, and whenever they evade carrying their nuisance to the water side, the Mehters are generally fined.

Q. 20.—There are private Privies in my Division ; unless they become a public nuisance I never interfere, but on the first complaint endeavour to suppress the nuisance.

No. 14.
E. Campbell
to
Municipal 2d Sub-
Committee,
Calcutta, 14th March,
1837.

Q. 21.—I have a Dome Cart going every day through the Streets of the Lower South Division, carrying all the dead bodies of animals to the water side, which removes all complaints of nuisance, by removing them whenever they occur.

Q. 22.—Their indifference to cleanliness.

Q. 23.—Cashya Baugan I believe is the largest Mussulman's Burying Ground in Calcutta—I have the oversight of it, and report its state monthly, but although the graves are not properly closed, owing to the great extent of ground it occupies, it's not injurious. I often walk there to examine it, but found nothing injurious to health.

Q. 24, 25 and 26.—None.

(Signed) E. CAMPBELL, *Overseer.*

15.—ANSWER OF H. G. STATHAM, CALCUTTA.

I respectfully beg to state, these Queries are not applicable to my Division, there being no Residents, Public Tatties, Private Tanks, or Pucka Drains in the Division ; There are eleven Public Tanks, which are in the best of order, and the Drainage of the Mydawn is effected by Surface Drains, which may be said to form parts of the Plain.

No. 15.
H. G. Statham
to
Municipal 2d Sub
Committee,
Calcutta, 14th March,
1837.

(Signed) H. G. STATHAM,
Overseer of Chowringhee Plains.

16.—ANSWERS OF GEORGE DICK AND OTHERS, CROOKED LANE, CALCUTTA.

Q. 1.—The present Drains are in a very dirty state, much neglected, are receptacles for all sorts of filth and putrifying matter. The Drains in some part of the Lane are also suffered to get choked up.

No. 16.
George Dick and
others
to
Municipal 2d Sub-
Committee,
Crooked Lane, April,
1837.

Q. 2.—The present Drains are not free from bad smells, and are generally in an offensive state, from not being regularly kept clean.

No. 16.
George Dick and
others
to
Municipal 2d Sub-
Committee,
Crooked Lane, April,
1837.

Q. 3.—We presume that of the Scavengers, and others under the orders of the Conservancy Department. The Scavengers seldom or ever come to inspect the Drains, and the state of the Lane generally.

Q. 4.—No !

Q. 5.—None !

Q. 6.—There is a receptacle of filth, &c. in the shape of a small spot of waste ground, bordering upon the Lane, which is made a Privy of by the Natives, and has not been cleaned out for years, the place smells very bad, and is very unhealthy in consequence. If the spot in question was walled round, it would obviate the evil.

Q. 7.—Tank Water good. Water from Tank Square is used for *drinking*, but for ordinary purposes Well Water is used.

Q. 8.—None !

Q. 9.—We presume they are—by the occupants of the houses themselves.

Q. 10.—No !

Q. 11 and 12.—None.

Q. 13.—They are not,—they are in some places. We should think not. On the East of Crooked Lane, there is a regular *Bhustee* of huts, all clotted together, and we conceive it must be very injurious to health, and the place altogether is always in a most filthy state, occasioning most abominable stench, whenever the wind blows from the South East ; a Road might be easily cut through it to meet Crooked Lane from Cossitollah in a direct line.

Q. 14.—There is a small spot, adjoining the waste ground before alluded to, which is also a receptacle for filth, and is made a Privy of by the Natives, and has been in that state for years, injurious to health. In this spot is erected a godown opening out in the Lane, which has been unoccupied for several years, the door of it being always kept open induces the Natives to make it a Public resort—it has never been cleaned out to our recollection, and the stench sometimes is enough to suffocate any person passing by.

Q. 15.—None particularly, but would recommend that the Lane be widened. See Quere 13.

Q. 16.—Cannot say.

Q. 17.—None in our immediate neighbourhood.

Q. 18.—The filth of the Native huts (see *Querie 13*.) is thrown out of their immediate compounds, from whence it is never taken away.

Q. 19.—None.

Q. 20.—We presume each house has one, and for their own comfort they keep them clean.

Q. 21.—Not often.

Q. 22.—That of committing public nuisances in different parts of the Lane, particularly in the vicinity of the Lamp Posts, which are never removed, but are allowed to dry up, creating abominable smells, and disgusting to the sight, as well as injurious to health—the Police Chokeydars should look to this.

Q. 23.—None.

Q. 24 and 25.—We cannot say.

Q. 26.—The Stables and Coach Houses belonging to Garstin's Buildings, are causes of unhealthiness and discomfort to the inhabitants. The Stables, in which a number of Horses are kept, are in a confined situation, not properly ventilated, and kept in a very dirty state, for want of proper Drains, and the filth allowed to accumulate. The place is a perfect nuisance altogether; that part of the Lane being very narrow, the way is often blocked up, the entrance not admitting Carriages and Buggies being taken at once into the Stable Compound, and the Coach House doors open out into the Lane. These nuisances might be obviated by some alterations being made in the Stables, and Mr. J. C. C. Sutherland, who acts as Agent to the Proprietor, would no doubt attend to any suggestions that the Committee might choose to make.

There is a large spot of Ground to the East of the Lane, occupied by Native huts, entrance from Cossitollah—the place is thickly populated, and being in the heart of the Town, must be very unhealthy, as we do not think the place is kept very clean; there was formerly a public Necessary, since its removal, the Natives use a small open spot, which is never cleaned, and is the cause of bad smells.

The ground above alluded to, is advantageously situated for building, and a Road might be cut through it in a direct line from Cossitollah.

GEORGE DICK,

For self and others.

Crooked Lane, April, 1837.

No. 16.
George Dick and
others
to
Municipal 2d Sub-
Committee,
Crooked Lane, April,
1837.

MUNICIPAL ENQUIRY.

Second Sub-Committee.

EVIDENCE.

No. 1.

First Day.
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
23d July, 1836.

No. 1.

Town Hall, Saturday, 23d July, 1836.

Lieut. W. Abercrombie, examined.

FIRST DAY.

Q. 1. What is the relative height at different periods of the year, of the tide of the River Hooghly opposite the Town of Calcutta, and of the Salt-water Lake, as compared with each other, and with the general level of the Town?—**A.** I will send a table of the levels, authenticated by my signature.

Q. 2. Have you examined into the accuracy of those levels, and on what ground do you think them accurately taken?—**A.** I have not been called upon to examine into them, but they were taken by Officers employed by the Lottery Committee and Government—Major Schaleh, Major Taylor, Captain Prinsep and Captain Forbes of Engineers, and some by Mr. Blechynden, my predecessor.—The paper I will send, is taken from these Surveys.

Q. 3. What is the difference of level between the general average level of Calcutta, and the level of the lowest part of Calcutta, and where is that lowest level found?—**A.** The highest level is in Clive Street and the Strand, and part of the Roads leading into Clive Street. It appears an artificial bund raised in a part of the former channel of the river. The difference between this and the lowest part of Calcutta, is about twelve feet. The lowest level is between the central road, or Cornwallis and College Street, and Amherst Street.

Q. 4. With reference to the object of carrying off the water, whether fallen from the clouds or rising from springs, which, in your opinion, is the proper direction for the general system of drainage in Calcutta, towards an ultimate discharge of the water—the River Hooghly or Salt-water Lake?—**A.** The natural fall is from West to East, that is, towards the Canal and Salt-water Lake. This therefore is the right direction for a general system of drainage, for surface-drainage at all seasons of the year. I am of opinion that if there were no obstructions or hollows between the Strand Road and Circular Road, surface-drainage would be practicable in that line at all seasons of the year. If a system of surface or open

No. 1.

First Day.

Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
23d July, 1836.

drainage were adopted, I do not see where the earth could be got to fill up the numerous saucers of which the whole Town is composed. It would be attended with so great an inconvenience to private property—the filling up these concaves as connected with the expense, to be hardly practicable. Open drains sufficiently deep might be constructed, paying due attention to the levels, to carry off the water from all these hollows, in the direction I have mentioned at all seasons of the year. It is now carried off, as far as regards mere drainage, so far as I have had an opportunity of observing.

Q. 5. Would there be any advantage in taking a line from North to South along the Chitpore Road, and carrying open drains from it, Westward to the Hooghly, and Eastward to the Canal?—A. I do not see any advantage. You commence from a lower level than the Strand Road, and supposing you commence from a level of the Chitpore Road, without a drain there of any depth at all, a drain running along Cotton Street, for example, would, by the time it reached the Strand Road, with a total fall of about nine inches, be nine feet deep, and this in the most trading part of the Town. It would be such an expense, from its depth, as more than to compensate the shortness of distance. The advantage of setting out from the highest level in a flat like Calcutta, ought never to be lost sight of.

Q. 6. Would there not be a great accumulation of filth, which, from the length of drainage from West to East, receiving the cross drains from North to South, would be very objectionable?—A. If open drainage were adopted, which is not adapted to a good system of cleansing, it would require as much labour to keep the drains clean upon the one plan, as the other. Open drains are not adapted to the cleansing of a great Town. Main Sewers under the principal Streets, connected both with the Hooghly and the Canal, I should consider the best system, speaking as of a general principle for cleansing Calcutta. The detail might be managed in different manners. A considerable supply and fall of water are necessary to keep Common Sewers clean. I am of opinion that both may be commanded at Calcutta. I would use both the Hooghly and the Canal at different seasons—at times when the Hooghly is so high, as to burst the Sewers, I would use the Canal, probably a reservoir, in this case, would be necessary, in order not to entrench upon the supply of water in the Canal, and to be used during the rains.

Adjourned to Saturday, 10th September, 1837.

Town Hall, Saturday, 10th September, 1836.

Lieutenant W. Abercrombie, examined.

SECOND DAY.

No. 1.

Second Day.
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
10th Sept. 1836.

Q. 7. You said at a former examination, that the water is now carried off as far as regards mere drainage, so far as you have had an opportunity of observing, are you still of the same opinion?—**A.** I remain of opinion that all the rain water, except that which falls into tanks, is drained off eventually, and as quickly as is necessary for practical purposes. I have never seen it lie above an hour at most.

Q. 8. It is presumed you speak of the water as drained off the general surface; is there any deposit of water in the Drains, which is not carried off, and if so, owing to what causes?—**A.** In the large open Drains, none of which are paved, there are of course inequalities in their bottoms, in which the water lodges. But it is so mixed up with black mud, and filth, that I should call these the chief nuisance, and not the water itself. The main Drains have an outlet into the Canal—except some which have brick Tunnels into the River—All the smaller Drains are cut, so as to run into the large ones. This is the plan at least, on which they have been cut, but not being paved, it is impossible they should always act, or keep their level. They are liable to be deepened too much in one place, and not enough in another. The Coolies are continually employed in cutting here, and there, wherever considered necessary by the Overseers.

Q. 9. Do you think this cutting (viz. the open Drains) directed in a judicious and scientific manner?—**A.** The Drains are not formed in a judicious and scientific manner—the cuttings are mere temporary expedients, liable to be filled up next day with dirt.

Q. 10. Is there a great deposit of water in the Drains?—**A.** There is a great deposit of wet filth, during the rains. In the dry weather, what falls, or is thrown in, hardens, and is not removed till it does so. During the rains, the way the Drains are cleansed, is by a bundle of straw, twisted into hard ropes, six or nine inches diameter, and three or four feet long, dragged by ropes at each end, by Coolies, with great labour along the bottom of the Drains. It answers the temporary purpose, but it is impossible to use it so often in each Drain, as to keep it in any efficient state of cleanliness.

There is no such flow of water at present into the Drains, or such fall preserved in them, as to keep them in any tolerable state of cleanliness. It is impossible to accomplish these objects, without an entirely new construction of Drains.

No. 1.

Second Day.
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee.
10th Sept. 1836.

I have never formed any design of my own, for cleansing and draining the Town of Calcutta, but I have read schemes for systems of covered cleansing and drainage, and I have heard a scheme mentioned for a system of open cleansing and drainage, either of which need some modifications, but at a great outlay, would be a great improvement on the present state of the cleansing and draining, but neither would supersede the necessity of a considerable permanent Establishment.

No Establishment of itself within moderation, would accomplish these objects in any tolerable manner, or supersede the necessity of considerable original outlay.

No system of open drainage could succeed, without paving the bottom, and lining the sides with brickwork or masonry.

Since I was last examined by the Committee, I have heard objections stated to a system of covered drainage. But upon considering them, I continue of opinion that a system of open drainage is not well calculated for cleansing. The expense however of covered Drains and Sewers, would be extremely large. By referring to a scheme in my possession, I could let the Committee know the account and amount of the estimate. It was a scheme sent in by Captain Thomson, at the desire of the Chief Magistrate, and forwarded to Government. I have considered the scheme proposed by Captain Thomson, so as to form a judgment upon it of my own.

As a plan to carry off the filth of the Town, as well as the water, I approve of it in general. The River flows, by his plan, through the whole Sowers, except at the season when it is at the highest, when it is to be supplied by a reservoir at the head of one of the Canals. There is to be a continual flow from the River, into the River, or into the Canal, at different seasons, except at one season, during the greatest height of the River, when it is to flow from the reservoir, into the River—the flow from the reservoir meeting the River Sluice-gate, at, or near low water.

This flow would certainly occasion a deposit of Silt, which would have to be cleared away by Coolies. I think that an objection to the plan, the great original outlay, leaving still a necessity for great Establishment, without including the above.

The Scavengering would still be necessary, and a strict enforcement of the present, or other laws, to prevent the deposit of filth and rubbish in the Streets and Drains.

I do not think any plan of covered drainage could be adopted, which would be free from these objections, or would lessen them, below those lying to Captain Thomson's plan. I think a less expensive plan might be formed, but liable to a great diminution of efficiency.

Keeping up a permanent Establishment, I have no doubt of the efficacy of his plan.

I have not mentioned that Captain Thomson proposes foot pavements. I think they would be attended with great inconvenience to the Inhabitants of Houses, by preventing Carriages from drawing up to the doors, but would prevent many nuisances. There is a simpler plan by Mr. Blechynden—a series of small Tunnels to run parallel to each other, across the Town from West to East. One was to cost I think 50,000 Rupees. I think of five feet diameter. He gave the Statement of one Tunnel only, to be formed as an experiment.

No. 1.
Second Day,
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
10th Sept. 1836.

The expense of the number of Tunnels necessary, according to Mr. Blechynden's plan, would probably not exceed one-third of the expense of Captain Thomson's, say ten Tunnels. But I doubt their efficiency—the Tunnels are so small, that they would probably fill up with deposit entirely, and they are hardly large enough to carry off the rain water.

Q. 11. There are Sewers, one under Government House compound, from East to West; and there is another—they have been 30 years formed, nearly the same as those proposed by Mr. Blechynden. Have you ever known, or heard of their being filled up? They are straight Tunnels.—A. I never heard of their being filled up, but Coolies are constantly employed cleansing them. They are very short, and there are but a few of these Tunnels—I think one which passes under the Insolvent Court is closed up, but I will enquire about them—that one has a very bad stench.

Q. 12. There is a Tunnel running down Court House Street, crossing the Street at the corner of Tank-Square, and going zig-zag. It has been dug twelve years—Is there any considerable deposit in this, so as to obstruct the passage of water?—A. That Drain is the most filthy Drain in Calcutta, people are constantly employed in cleaning it, so that there can be no great deposit. I know of open Drains running into the Canal, in which considerable deposit has to be cut away continually.

Q. 13. Do you not think that Sewers, something in the plan of those under existing management, in straight lines, more scientifically built, with the addition of being forced by water from a raised reservoir similar to that which Captain Thomson's plan also requires, and also taking advantage of the rise and fall of the tide—the different levels of the Salt Water Lake, and the River, would be much less expensive than Captain Thomson's plan, and would be as efficient for the purposes of cleansing and draining?—A. These Tunnels would have to carry off the whole water drainage. I take from Baug Bazar to Government House to be three miles, and from the Canal to the River a mile. A fall of rain of four inches over that space, would give 27,875,612 cubit feet of water. I would say the Tunnels should be constructed sufficient to contain that quantity, whereas 10 Tunnels, each of a mile long and 5 feet square, and fully larger than any at present in Calcutta, would contain but 1,320,000 cubit feet. I have already stated that the covered Drains are, in my opinion, the best for cleansing, but require constant labour to clean them.

I don't think any rush of water that could be obtained here, would keep them clean without labour.

No. 1.

Second Day.
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
10th Sept. 1836.

The expense would be greatly less, but these Tunnels would be inefficient.

Q. 14. If a number of Tanks were dug in the lower parts of the Town, would not this be sufficient, with proper slopes to them from the Roads, to draw off, in all common cases, the surplus water, which the Tunnels had not capacity to hold?—

A. Certainly, if you could make a sufficient number of Tanks, and of sufficient capacity. Whether this could be done is matter of calculation, and I have not the materials here at present. If the surplus water could be thus disposed of, I should still have an objection to those small Tunnels. They would be very long, and could not be kept clear, without great annual expense—in addition to which, there would be the cross Drains, which latter would be required in any system.

Adjourned to Monday the 12th September.

M. Abercrombie
 Town Hall, ~~Saturday, 10th~~ September, 1836.

Lieutenant W. Abercrombie, examined.

THIRD DAY.

No. 1.
 Third Day.
 Lt. W. Abercrombie,
 before
 Municipal Enquiry,
 2d Sub-Committee,
 10th Sept. 1836.

Lieut. Abercrombie before being further examined, desires to state as follows—In reference to the enquiry on the subject of forming Tanks for the purpose of drainage, I can now state that I have considered the subject, since the last meeting of the Committee.

Six Tanks, 1,000 feet square and 20 feet deep, would hold but one-seventh of an average annual fall of rain in Calcutta, being sixty inches, and these six Tanks would cost at least six and a half lacks of Rupees. I think more. It would cost that sum at Four Rupees per Chowka, i. e. per Cube of 9 feet.

Q. 15. The rains are calculated to extend over a period of about four months. Can you form any opinion of the quantity of water that would be carried off by the small five feet Tunnels, spoken of on Saturday, during the period of the rains?—A. I cannot answer this question accurately at present. It is one of great detail.

Q. 16. With reference to the fall of 4 inches, which may be expected to occur at one time, what proportion of that fall do you think might be received by the six Tanks you have spoken of?—A. The whole of that fall would be contained by those Tanks, supposing them empty at its commencement. They would hold it, if considerably more than half full. It would require calculation to ascertain with any degree of accuracy whether the small Tunnels spoken of, and the Tanks of the number and size I have mentioned, might be safely relied on, to carry off or receive the fall of 4 inches, at all times during the rains, but I am at present of opinion, that they could not during the latter part of the rains.

I will furnish the Committee with a calculation * upon this subject. I do not think much allowance ought to be made for evaporation.

* Referring to the Committee's Query No. 16, of 12th September 1836, it appears that a fall of 4 inches, over a surface of 3 miles \times 1 = Cubic feet of water 27,875,612-16.

ALSO

Cubic feet 16,400,000 = Capacity of a Tank..... 1000 \times 1000 \times 20 feet, having slopes of 5 to 1.
 98,400,000 = ditto of 6 ditto ditto ditto
 The above number of Tanks, consequently would hold a fall of about 12 inches.

Referring to Query No. 15, of the same date, it appears, that the Tunnels therein referred to, being only 5 feet square in their opening, their floors can hardly be placed lower than the highest Spring Ebbs of the Hoogly, which will be 8 feet below the lowest part of Calcutta, and 28 below the highest, which highest part however, comprising but a very small portion of the Town, the mean fall of a stream running from the Town, into, and through the Tunnels, cannot be taken at more than 10 feet.

Under these premises it appears that the ten Tunnels could carry off during the four rainy months, their sluices being closed by the high tides twelve hours a day, cubic feet of water = 631,564,731, or a fall of 80 inches.

Calcutta, 26th December, 1836.

W. ABERCROMBIE.

No. 1.
 Third Day.
 Lt. W. Abercrombie,
 before
 Municipal Enquiry,
 2d Sub-Committee,
 10th Sept. 1836.

If this plan of drainage were adopted, there could no surface drainage exist, except in Clive Street.

Q. 17. There is a waterfall in many parts towards the Salt Water Lake and Canal, would there not be a considerable portion of the annual fall of rain, carried along the sides of the roads, by the water slopes, without any considerable inconvenience?—A. Not without considerable inconvenience, because that waterfall is checked by intervening hollows, which would form swamps. At present this water is carried off by ditches, whose floors are a lower level than the swamps, which ditches would not, or should not exist, in a system of covered drainage.

Q. 18. Do you mean to say in all places there are these checks?—A. I mean to say that there is not one even fall, to my knowledge, in any part of Calcutta from West to East.

Q. 19. Is not the greater part of the fall of water carried into the Mahratta Ditch at present?—A. It is carried right across the Ditch into the Canal. Part of it goes into the Ditch. But the Mahratta Ditch is of no use whatever for drainage.

Q. 20. In case of a sudden fall of rain, might not a part be received by the Mahratta Ditch, till it might run off?—A. Not to any benefit. It would hold nothing.

Q. 21. Would not the formation of Tanks such as you have mentioned, or even of smaller dimensions, be, in your opinion, of great advantage to the salubrity of the Town?—A. The formation of Tanks in the parts of the Town, on the lowest horizontal level, would turn filthy places into clean Tanks, and force the still dirtier inhabitants to place their residencies on a higher level, whence there would be a greater facility of drainage and cleansing.

Q. 22. Is there any want of water in any parts of the Town for domestic purposes, which would be supplied by such Tanks?—A. There must be a want of clean water in the Native parts of the Town, which these Tanks would supply. The present Tanks in the Native part of the Town are small, and extremely filthy—in the dry weather, covered with slime and green vegetables.

Q. 23. Would there not be considerable advantage to the salubrity of the Town, from applying the quantity of earth supplied by the excavation of Tanks such as you have mentioned, to the filling up hollows and swampy places?—A. It would be of great advantage to the salubrity of the Town, but would probably be attended with great difficulty and complaints among land and householders.

Q. 24. Are there not a sufficient number of hollows and swampy places, which ought to be filled up, to receive all the earth which would be dug up by

such excavation?—*A.* There are certainly. There are no public Tanks along the Circular Road. The inhabitants about a month or six weeks ago, made a request to the Conservancy Department, to have three Tanks excavated.

No 1.
—
Third Day.
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
10th Sept, 1836.

Q. 25. Could you furnish the Committee with estimates of the expense of carrying into effect the different plans suggested or referred to, in the course of your examination?—*A.* Captain Thomson's and Mr. Blechynden's Estimates are in the Police Office. The Committee on application to the Chief Magistrate may obtain copies of them.

The Estimate I have given, is a pretty high one, of excavating alone, but I have not mentioned any thing for sloping and turfing the banks, making walks round them, enclosing with wall balustrades, &c. I think my Estimate would cover these expenses.

I think the Tanks ought to be excavated in the lowest parts of the Town, or near them, where the filling up is most necessary. I should think that by a judicious selection, situations could be chosen, in which the advantages of a proximity between the proper places for Tanks, and proper places to be filled up, might be combined, so as to add little to the expense included in the above Estimate.

I think Six Tanks of the dimensions I have mentioned, would be sufficient for the purposes of affording airy openings, being combined with broad Streets, and for filling up, or excavating hollow and swampy places, and affording an adequate supply of clean and wholesome water.*

One of the reasons for placing the Tanks in the lowest parts of the Town is, that they may be more readily filled with rain water. Consequently the drains must communicate with them—the shallow surface drains, if covered drainage be adopted,—the open drains, of whatever depth they may be, if open drainage be adopted.

Meeting adjourned to Saturday, the 17th September, 1836.

* Farther acquaintance with the Town, makes me desirous to retract this opinion,—the water would not be wholesome for domestic purposes, but the open spaces of the Tanks would contribute towards the general salubrity of the Town.

The deposit from the Drains, would have to be cleared out of the Tanks about once in three years, the operation being expensive, the dirt so long as it remained under water, would not affect the public health.

W. ABERCROMBIE.

Calcutta, 15th June, 1837.

No. 1.

Fourth Day.
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
17th Sept. 1836.

Town Hall, Saturday, 17th September, 1836.

*Lieutenant W. Abercrombie, examined.***FOURTH DAY.**

Q. 26. Have you any observations which you can submit to the Committee, with regard to the present state of the cleansing the Streets of Calcutta?—**A.** There are at present no effectual means in use, for putting the Streets into a proper state of cleanliness, and preserving them in such. Dust and rubbish, and all kinds of dirt are thrown into them, *ad libitum*, from every house, to be picked up as may be, when the carts of the present very inefficient Establishment, may happen to come round. The greater number of these carts, are common Native Hackeries of the worst description, which will hardly hold two gurrahs of rubbish, without its falling off. These are drawn by wretched old bullocks, unfit for employment by the merchants, and are supplied by a contractor. The drivers are also obtained in the same manner, so that there is no effectual control over them, when they neglect their work, or do it lazily. The coolies also are supplied in the same way. They appear in the morning at muster, as stated in the paper* I have delivered in, but the probability is, that half of them neglect their work, in order to work for private employers, receiving pay from both them, and the Town. The contractor also, as he receives no salary, is obliged to make his profit out of their wages, and the people who obtain the coolies, and hackeries for him, must do the same. I submitted a paper upon this subject, to the Chief Magistrate some time ago, a copy of which might be obtained, if desired.

* Return of the Muster of the 4th Division, September 10, 1836.

DIVISIONS.	Overseers.	Sircars.	Birdars.	Peons.	Males.	Sirdar Metters.	Sirdar Doomes.	Horse Box Carts.	Co.'s Bullocks for ditto.	Small Carts.	Horses for Rollers.	H. Co.'s Bullocks for Rollers.	Hired Bullocks for ditto.	Hired Bullocks for Box Carts.	Hackeries.	Loading Coolies.	Drain Coolies.	Coolies for Rollers.	Boys.	Bluesties.	Metters.	Doomes.	Dogs' Heads.
Upper North,	1	1	1	6	20	1	1	3	0	0	0	0	4	10	27	42	83	2	10	0	12	4	5
Lower North,	1	1	1	6	21	1	1	3	0	14	8	0	0	20	11	33	96	0	10	0	14	3	6
Upper South,	1	1	1	6	24	1	0	4	3	0	8	5	17	20	22	42	116	0	16	12	12	3	6
Lower South,	1	1	1	6	23	1	1	4	0	0	0	0	0	19	20	42	68	0	28	11	12	4	5
Total.	4	4	4	22	88	4	3	14	3	14	16	5	21	78	80	159	363	2	64	23	50	14	22

I do hereby Certify the above is a correct return of the Establishment, as Mustered by me, deducting such as was reported absent by the Overseer Peons, and Sircar.

H. G. STATHAM, *Inspector.*

Proper Police carts are now constructing, which will tend to improve the system, but cannot do so in any very great degree, while the Roads are liable to be spoilt, and clogged by masses of dirt and rubbish, being thrown out on them.

No. 1.
Fourth Day.
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
17th Sept. 1886.

In one part of the Strand Road, a large grass market is kept, and I have seen the dirt lying six inches thick along that part of the Road, for more than a furlong in length.

At Hautkholla, the Road is completely shut up, two days in the week, by a market held there, and the side drains are stuffed, and choked with dust of grain and flour. It is more like a fair, than a market—every thing being sold there.

In Durmahatta and Burra Bazar, the people expose their goods on the Road itself daily, and it was only yesterday, that I met with an instance of a man holding a shop, about six feet long, and two feet broad, built over the drain, extending to the Street edge, having no communication with the house it was built against. To this place, about four feet above the level of the Street, he wished to build an entrance, by steps upon the Street.

Q. 27. Are there no existing means of preventing the throwing of dirt and rubbish into the Streets, in the manner you have mentioned?—A. There are the Bye-Laws, which on this subject, at least, have fallen into disuse. I mean they are not enforced. Under the present mode of dispensing the law, I would not bring a man up before a Magistrate, for throwing out upon the Road, the common dirt and refuse of his house, because it would be of no use. The answer I should receive, would be, that every one in Calcutta does it.

There are, in many parts of the Town, water spouts which project a foot and a foot and a half, and throw volumes of water from the flat roofs, on the Road, and dig deep holes in it. These I cannot get removed, although the remedy is simple to carry the water pipes down the wall into the drain. I reported one house, a very bad instance, but as I had reason to believe the spouts had been erected beyond the very short time limited by the Bye-Law, I could not get them removed by the Magistrate.

The Overseers of the Roads, are extremely timorous about acting, even under an order of the Magistrate, in removing nuisances. They say they are afraid of being prosecuted.

Q. 28. When these persons are so ordered to abate nuisances, are they not guaranteed against the consequences, if the order should happen to be illegal?—A. They have the Magistrate's written order, generally signed with the initials of the Magistrate.

No. 1.

Fourth Day.

Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
17th Sept. 1836.

Q. 29. Are the orders not formally drawn up, and signed by the Magistrate at length, authorizing the removal of nuisances *via facti*?—**A.** A report is made of an encroachment, and an order is endorsed on it "remove" or "summon," and signed by the Magistrate with his initials.

Q. 30. Is this all the written authority delivered to an Overseer, when he is directed to remove property, supposed to be a nuisance?—**A.** It is—a record is made of it in the exact words, in which it is written, the initials being copied.

The fact is, the Overseers will never remove a wall or other permanent nuisance upon these orders,—they will only prevent it from being carried on.

Adjourned to Monday the 10th October, 1836, at 11 A. M.

Town Hall, Monday, 10th October, 1836

Lieutenant Abercrombie, examined.

FIFTH DAY.

No. 1.

Fifth Day.
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
10th October, 1836.

Q. 31. Are there any matters connected with the Conservancy Department of Police in Calcutta, not embraced by the questions which have been asked you, on which you can give the Committee any information that you think material to the purposes they have in view?—**A.** There are no sufficient means provided for the removal of ruined houses, numbers of which in the Native parts of the Town, (built of brick and mud cement) fall after every heavy shower of rain. It is usual for the Magistrates on receiving a report that a house is in a ruinous and dangerous state, to serve a notice on the proprietor, but these notices are rarely attended to, and the Magistrates have no power to punish the neglect. The proprietors do not even request the Police to remove the ruinous and dangerous buildings, when they are too poor to do it themselves. The consequence is, the ruins fall, obstruct the passage of the Road, also of the Drains, which is productive of excessive inconvenience during a heavy fall. The ruins sometimes fall into other people's grounds, and block them up, and sometimes destroy the property, and the proprietor has no redress, but an action. These ruins are usually removed by the Conservancy, and used for metalling the Roads.

I cannot mention instances, but I have heard of people killed by these ruins falling upon them.

The only punishment ever inflicted on the owner, is taking away the bricks, unless the public drains or passages are obstructed by the fallen rubbish.

Q. 32. Do you mean to say that there is no power in the Magistrate, under any Regulation, to compel the proprietor to take down, or repair a building in a dangerous state?—**A.** I know of none, and I know, if such exists, it is never put in force.

Q. 33. During the late very heavy fall of rain, do you know of any such walls or buildings, having fallen, in consequence of the heavy rain, and what number do you suppose, and to what extent of damage?—**A.** I did not visit any of the places, but I suppose I had not less than twenty-five or thirty reports, of different buildings having fallen, from the Overseers of the districts—either of buildings having fallen, or being in such a state, as to be ready to fall, after the heavy fall of six inches, which happened the beginning of this month.

If any person was killed, it would not be reported to my Department, but to the Judicial. Mr. Tweedale, Overseer of the Upper North Division, would be able to give the Committee more information on this subject. There were a great many obstructions occasioned by the fall of these ruins.

No. 1.

Fifth Day.

Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
10th October, 1836.

Q. 34. Are there any other obstructions or nuisances affecting the Roads, about the removal or prevention of which, any difficulty is supposed to exist, under the powers at present vested in the Magistracy?—**A.** Coconut and other Trees obstruct the passage of several of the smaller Streets, having their stems and branches projecting over the Road, and their roots in ground which is private property.

There is a quantity of unhealthy jungle also in many parts of the Town, growing on private property, which you are not entitled to cut down, without permission. There are also green and unwholesome Tanks and Ponds, private property, (useful to the proprietors but very unhealthy, and nuisances in that respect) used for dirty purposes, washing the person, and dirty utensils, and other things in.

The proprietors would oppose the cutting of this jungle, or filling these Tanks and Ponds, by main force in the first instance, and they would bring the law down upon us in the next. They are very tenacious and jealous of any encroachment upon their property.

Adjourned to Saturday, 19th November, 1836, at half-past Ten A. M.

Town Hall, Saturday, 19th November, 1836.

Lieutenant Abercrombie's replies to the Queries furnished him.

SIXTH DAY.

No. 1:
Sixth Day.
Lt. W. Abercrombie,
to
Municipal Enquiry,
2d Sub-Committee,
19th Nov. 1836.

Q. 35. Are you sufficiently acquainted with the general extent of Calcutta, and the state of the interior of the Native part of the Town, to describe its situation to the Committee, in respect to easy means of communication for the Inhabitants, and a free circulation of air through it by Streets, Lanes, and other openings?—**A.** I believe I am: the only broad Streets in the Native part of the Town, are Amherst Street and the Central Road; the former is unfinished, and neither are considerable thoroughfares. The Chitpore Road is the great thoroughfare: it is narrow, winding, dirty and encroached upon. The crossways are all Lanes: very narrow, very filthy, and bounded generally by deep open ditches, the Road being supported by perpendicular retaining walls: Soba Bazar Street and Nintolloh, are the only two cross Streets, which form an exception to the above; they are both however, and the latter especially, bounded by deep ditches, and not above 25 feet in width.

Q. 36. What is the condition generally of the Native Town in these respects, as regards convenience, cleanliness and health?—**A.** Respecting convenience, I should say that the public convenience was never thought of, in lining out the Streets and Lanes in the Native part of the Town: respecting cleanliness I have already given evidence; the Streets are covered with dirt thrown out *ad libitum*, and the drains frequently filled with filth from Privies, in addition to other nuisances.

Q. 37. What is the distance from North to South, between the part of the Town that has been rendered open and airy by wide Streets, and is inhabited chiefly by the European population, and the Northern extremity of the Native Town?—**A.** Three miles and a quarter—from Durrumtollah Road, to the Northern extremity of the Mahratta Ditch.

Q. 38. What is the breadth from West to East of the Native Town?—**A.** Average breadth $1\frac{1}{4}$ miles.

Q. 39. Does not the wind blow for the greater part of the year in Calcutta from South to North, and for the rest of it generally from North to South, or from North West or from North East?—**A.** It does—as appears by Prinsep's Meteorological Registers.

Q. 40. Would it not therefore be the great object in regard to the ventilation of the Town, to establish spacious openings through its whole length, from South to North, and does not the wind during the whole year, with short intervals of exception, blow in the directions before mentioned, with such force as, if such openings were established in straight, or nearly straight lines, to secure at almost all seasons of the year, a free and rapid circulation of air?—**A.** It would certainly be very advantageous to open new broad Streets running the whole length of the Town, North and South, but open communications with the River are more imme-

No. 1.

Sixth Day.
Lt. W. Abercrombie,
to
Municipal Enquiry,
2d Sub-Committee,
10th Nov. 1836.

diately required—undoubtedly such Streets would afford a free and rapid circulation of air.

Q. 41. Would not this be also the best direction for main Streets for the purpose of communication?—A. I do not think it would be the best for means of communication—the purposes of communication with the Country are already supplied—the River is almost sealed to the Native part of the Town.

Q. 42. How many principal Streets in this direction? of what width, and at what distance? Are these at present, within the limits you have described, as forming the Native Town, and are these Streets tortuous or straight?—A. There are the Circular Road, Amherst Street, Central Road, and Strand—the whole of them very broad, varying from 60 to 80 feet, the first and last tortuous—but slightly so, and the second and last incomplete in their lengths.

Q. 43. Do all the Streets you have mentioned, pass from end to end of the Town, right through it, and if not—which of them, and for the rest, how far do they go in this direction?—A. No; Amherst Street is bounded by Bow Bazar and Mau-nicktolloh Street, and the Strand Road terminates at Hautcolloh.

Q. 44. Are there any, and what, and how many Streets of the same or greater width, which pass right through the Native Town, from West to East, and are they tortuous or straight?—A. There are—the Bow Bazar and Collootolloh, the former, allowing Fairlie place to be considered a continuation of it, divides the Town, and is a fine straight Street, of about 60 feet in breadth, the latter is not very broad, and terminates, just where it would have been most useful to have continued it on, it is terminated by the Circular Road to the Eastward, and Chitpore Road to the Westward, it is straight as far as it goes, and about 35 feet in breadth.

Q. 45. What is the general width, extent, straightness, or tortuosity, evenness, and hardness of surface drainage, and cleanliness of the other Streets, Lanes or Alleys, forming the only other means of communication within the Native Town of Calcutta?—A. These Lanes I have already described, the only thing I can say of them to their advantage, is, that they are dry, the water does not lodge in the Streets, however much is detained in green Tanks, &c. in their neighbourhood.

Q. 46. How many main Streets from North to South, at what distance from each other, and of what width are you of opinion would be sufficient for the purposes abovementioned, of securing convenient communication, and a free circulation of air?—A. In replying to this question, I beg leave to state, that I give the required opinions wholly with reference to the improvement of the Town, and under no consideration of expense: which may with greater propriety be for the present dispensed with and can be made a subject of future enquiry.

I have marked the proposed new Streets and Tanks in the accompanying Map, in blue: the red figures show the comparative levels, measuring from

Major Schalch's base line, the highest rise of the Salt Water Lake. I should not think that new main Streets judiciously lined out, so as to become great thoroughfares, would be any great improvement, unless made 60 feet broad : it would be a judicious general rule also, to prevent the walls of any houses, being built within 5 feet of the edge of the Street, the Street might be lined with an iron railing running along the side drain, on each side—this would prevent encroachments, and leave room for sun-shades and verandahs.

No. 1.
Sixth Day.
Lt. W. Abercrombie,
to
Municipal Enquiry,
2d Sub-Committee,
19th Nov, 1836.

Q. 47. Supposing such Streets to be established from North to South would it not be also necessary to convenience of communication, and a free circulation of air, that wide, spacious, and straight Streets should be formed, passing right across the Town from West to East?—A. I have already answered this query in the affirmative.

Q. 48. How many main Streets from West to East, at what distance from each other, and of what width are you of opinion would be sufficient for the purposes of securing convenient communication, and a free circulation of air?—A. I have marked these in the Map.

Q. 49. What would be the expense of forming the Roads and side Drains along such proposed openings or Streets, and removing the huts and other obstructions, which would stand in the way, without calculating any recompense to proprietors?—A. Metalling the Streets with Khoah, having a foundation of two bricks thick, and 6 inches of Khoa, would cost 20,000 Rupees per mile. Many of the proposed Roads, especially those near the River, would be better metalled entirely with stone. I have been endeavouring to collect data, for estimates of the expense of metalling with stone, giving stone foundation, but my calculations of the weights of the stone used, differ so materially from the Records of the Office, that I wish time for further enquiries, before framing such estimates. In this I have not included any expenditure of levelling the natural surface of the ground, and preparing it for the reception of the metal; this I expect to be included in the expense of excavating Tanks, the earth from which would be used in filling up hollow places. Supposing the new Streets to be formed through parts of the Town entirely occupied by Native Huts, I should suppose that 3,000 Rupees a mile would clear them.

Supposing these Streets to be bounded by surface Drains, not above a foot in depth, this part of the expense would not exceed 5,000 Rupees a mile.

Q. 50. Could such Roads or Streets be so conducted, with sufficient security for the attainment of the main objects proposed, without incurring the necessity of demolishing any houses of great value?—A. No. The straightening Cossitollah would destroy a number of valuable houses; also opening out the Streets on the continuation of the West side of Tank-Square. The widening the communications from the River would also do the same. All the Streets however might be lined out, so, that the length bounded by valuable ~~houses~~ *houses*, should bear a small proportion to the whole length.

No. 1.

Sixth Day.

Lt. W. Abercrombie,

to

Municipal Enquiry,

2d Sub-Committee,

19th Nov. 1836.

Q. 51. What would be the quantity of ground occupied by the Roads proposed?—**A.** The Roads would be eleven miles long, and contain 80 acres, or 242 Begahs of ground.

Q. 52. Can you form an opinion of the value of the ground so occupied, as the same would now sell in the market, in the places where it is situated in their present state, without contemplating any improvement to be made at the public expense, and if so, what do you suppose that value to be?—**A.** Near Amherst Street, ground is worth about 70 Rupees a Cottah; near the River in the European parts of the Town, it is worth 3,000 Rupees a Cottah—these are the extreme values.

Q. 53. What do you suppose would be the increased value per Cottah, of the land on each side of the proposed Roads, arising from their formation, and how far on each side of them, and for what distance from the Southern extremity of the Native Town would such increased value probably extend?—**A.** I cannot give a decided answer to this question—I have but little local knowledge on the subject.

Q. 54. Of the improvements you suggest, which, in your opinion, are the most necessary and advantageous to be first completed, and which the easiest to be accomplished in point of expense?—**A.** The most necessary in my opinion are the openings between Chitpore Road and the River; their continuation thence to the Circular Road, the most easy. There are no considerable Streets, but there are several narrow ones, running through the Town, East and West, such as Baug Bazar Streets, Rajah Nobokissen's Street, (almost a continuation of Soba Bazar Street) Maunnicktolloh Street, a continuation of Nimtolloh Street, Cotton Street, Machooa Bazar Street and Moorgehattah and Collootollah Streets. I have marked the two Streets down on the Map to be carried right and left to the River and Circular Road. I consider their being opened, indispensably necessary to the health and convenience of the Town: the expense would probably be 4 Lakhs of Rupees per Street, or more, but the expenditure would be fully repaid. I would divert the present line of the Machooa Bazar Road, from the Boysack's Tank, and carry it straight down to the centre of the New Mint, and also open out a Street Northward of the Mint, of the same width as the Street at present South of that building.

W. ABERCROMBIE,

Superintendent of Roads and Conservancy.

Examination continued on Thursday, 23d February, 1837, at 11 A. M.

Town Hall, Thursday, 23d February, 1837.

Lieutenant W. Abercrombie, examined.

SEVENTH DAY.

55. A. The Roads in the Town of Calcutta are not generally higher than the adjacent ground.

56. A. The Drains are full of offensive matter during the rains.

57. A. I can furnish returns for August and February of the number of people employed in cleansing the Drains.

58. A. In the European Division, the Drains are not so offensive in the rains. There were not so many complaints, as after the rains; but in other parts of the Town they are worse.

59. A. There is a rapid current through the Main Drains in the rains.

No 1. 1A
Seventh Day,
Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
23d Feb. 1837.

Town Hall, Wednesday, 12th October, 1836.

Captain J. Thomson, examined.

FIRST DAY.

Q. 1. and 2. What is the relative height at different periods of the year of the tide of the River Hooghly opposite the Town of Calcutta, and of the Salt-water Lake as compared with each other, and with the general level of the Town? Have you examined into the accuracy of those levels, and on what ground do you think them accurately taken?—A. I have accurate levels of the water taken and reported to me, and by that means I can judge of the accuracy of the instrumental levels which are published. These may be entirely depended upon, I mean the levels taken by Major Schalch and Captain Prinsep.

Q. 3. What is the difference of level between the general average level of Calcutta, and the level of the lowest part of Calcutta, and where is that lowest level found?—A. The lowest level is where the Machua Bazar joins the Circular Road, a little to the Northward of that. It is fourteen feet below the highest part, which is immediately behind the Mint. The height there, at the end of Clive Street is natural, except about eighteen inches of rubbish. The lowest level is eight feet above the Salt-water Lake. The highest twenty-two feet. The same high ground rises from the Fort to beyond Barrackpore. There is one place about seven miles above Calcutta, where the bank is sufficiently low, to allow the water of the River to pass into the Salt-water Lake, at the very highest tides only. The average level of the Chitpore Road is fourteen feet and six inches above

No 2.
Captain J. Thomson,
before
Municipal Enquiry,
2d Sub-Committee,
12th Oct. 1836.

No. 2.

Captain J. Thomson,
before
Municipal Enquiry,
2d Sub-Committee,
12th Oct, 1886.

Captain Prinsep's zero, which is taken at the average level of the Salt-water Lake. The average level of the Circular Road is eleven feet above zero. There are sufficient data in Schalch's levels to make an accurate design and estimate of any works connected with drainage. It is very extensive and minute.

Q. 4. With reference to the object of carrying off the water, whether fallen from the clouds or rising from springs, which, in your opinion, is the proper direction for the general system of drainage in Calcutta, towards an ultimate discharge of the water—the River Hooghly or Salt water Lake?—A. The natural drainage is towards the Lake, or rather the Canals, which intercept the passage to it. But the whole of Chowringhee, including the Esplanade, would naturally drain into Tolly's Nullah, and so into the River. There is no spring rising apparently in any one place, but there are beds of sand of various thickness and depth over the whole plain between the River and Lake, not one large bed of sand. There are beds of peat, yellow and black clay interposed. The Asiatic Journal, I think of 1834, gives the results of various borings all round Calcutta. The water rises and falls through these beds of sand to the general level. There is no practical difficulty in surface draining Calcutta, in point of levels, conducting the drains according to the natural levels, the greater part terminating in the Canal and Salt-water Lake. I think all the difficulties of carrying off the water from partial hollows, &c. might be overcome at a moderate expense, considering the great expense which must be incurred in any system of drainage.

Q. 5. Would there be any advantage in taking a line from North to South along the Chitpore Road, and carrying open drains from it Westward to the Hooghly, and Eastward to the Canal?—A. There was a communication formerly in which such a principal drain along the Circular Road was proposed. It was to avoid a particular inconvenience arising from the existing drainage carrying mud into the Canal. It would have cost a great deal of money—I estimated it two or three years ago. It would have cost five or six lacs. I do not see any advantage in such a drain along the Chitpore Road. There could be no open drain from it into the River, and it would be useless to the drainage between it and the River. The drains towards the Canal are sufficient at present for carrying off the water.

Q. 6. Would there not be a great accumulation of filth, which, from the length of drainage from West to East, receiving the cross drains from North to South, would be very objectionable?—A. The side drains would fill up the drain from North to South, which would be on a dead level.

Q. 7. You said at a former examination, that the water is now carried off, as far as regards mere drainage, so far as you have had an opportunity of observing, are you still of the same opinion?—A. I think the surface drainage is at present. The water remains in the drains, taking six or seven days to run off, without remaining on the surface.

Q. 8. It is presumed you speak of the water as drained off the general surface, is there any deposit of water in the drains which is not carried off, and if

so, owing to what causes?—A. There are several drains, the bottoms of which are nearly two feet below the outlet into the Canal, and must therefore be emptied by evaporation. They dig them deeper every year. They are not paved, nor have any fixed depth, and the Coolies continue to dig them deeper every year.

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Q. 9. Do you think this cutting viz. the open drains, directed in a judicious and scientific manner?—A. The drains were, I believe, originally formed to make the Roads, not laid down on any system. They are certainly not constructed or cleaned in a judicious and scientific manner.

Q. 10. Is there a great deposit of water in the drains?—A. I should say there was very little deposit of water in the drains, considering the extent of them. There is a deposit of filth in them to a very great extent. Last year they discharged 400,000 cubic feet of mud and sediment into the Canal. About one-fourth of the Town drains into the Canal. There is a general deposit of five or six inches, which is carried off by the carts, principally decomposed animal and vegetable matter, the cleansing of the houses, &c. creating generally, over the Native Town, a very disagreeable stench at all times of the day, but particularly in the morning, to what degree unwholesome is a medical question.

The carrying off the filth of Privies, is I think, very well managed, considering the difficulties, and that the whole must be carried off by carts. This I should not say is so done, as to prevent their being a nuisance.

The public Privies are a very great nuisance to the parts of the Town where they are. I do not conceive the private Privies to be any nuisance. There are an immense number of public ones. None of the houses have a private one, unless, sufficiently large to have a compound and a tank.

The present open drains, and the covered ones, serve the purpose of cleansing, as well as draining. The Loll Bazar, Durrumtollah, Chowringhee Road, part of Park Street, perhaps a mile of Chitpore Road, have covered drains. There are about thirty miles of drains altogether, about twenty miles of them are pukka, that is bricked; the whole covered drains would not exceed five miles of these twenty. Four miles perhaps would be nearer the mark.

The covered drains are quite ineffectual in respect of cleansing.

The account given by Mr. Abercrombie of the mode of cleansing the bottom of the drains with twisted straw is correct. It is used whenever the deposit is liquid, but is interrupted every twenty or thirty feet by bridges, and is rendered very ineffectual, for this reason. They are obliged to let the mud and filth dry, in order to remove it from beneath these bridges. I do not believe one-tenth of them has sufficient fall to keep them clean. In dry weather they have no flow of water into them whatever. For one-half of the year they may have sufficient water in them to keep them moist, but they are then in a worse condition—after occasional showers, than after long continued dry weather. It washes the dust of

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the Roads into them, and makes mud of it; in long dry weather they contract the dust which is blown about by the wind.

I drew up a plan and estimate for the drainage and cleansing of Calcutta, and affording a supply of water, for watering the Roads and putting out fires, for the Committee appointed by Lord William Bentinck. These were the objects it was desired to obtain. I did not consider it as a perfect plan, but merely to show generally what might be done—I had only a week to do it in.

I have not given such attention to the subject since, as to say whether I should adhere or not to that plan.

I think no plan of open drainage could be rendered effectual to the cleansing such a Town as Calcutta. It could not be so applied, without leaving a nuisance.

If a system of covered drains were adopted for the purpose of cleansing, it might be also employed with economy for the purpose of the general drainage.

The only practical difficulty in establishing a system of sewerage quite effectual for cleansing and draining of Calcutta, would arise from the possibility of meeting with quick sands. It could be overcome, by additional expense, every where, except in the neighbourhood of Tolly's Nullah, where the soil is very bad, a quick sand, to a depth at present unknown. If this could not be avoided, an open drain must be employed in that place. It would not be above half a mile in length, and not a greater nuisance than exists at present, from two open drains, which in that case would be filled up.

A sufficient difference of level may be commanded at all seasons for scouring out the sewers, and a sufficient supply of water to cleanse them. Mr. Abercrombie's description of my plan is correct, except that I do not concur in apprehending that there would be any material deposit of silt. I have not kept a copy of that plan.

There were objections occurred to me at the time to that plan. For drainage merely, surface drainage would be much cheaper and perhaps better.

There were many details which it would have taken long to consider.

I think my line of drains might be improved very much. I think the first thing would be to lay down a correct plan of surface drainage, and then to lay down the tunnels, but all this I consider practical in the designing.

My remarks upon the obtaining the means of scouring, delivered with my plan, were made in answer to questions or objections with reference to particular circumstances of the tides and levels of the River and Lake. I still retain the opinion that a scour may at all times be had. There is no doubt of the efficiency of covered sewers to prevent noxious effluvia which has been experienced in all Towns.

I think that if the system of sewerage should be found too expensive—a system of surface drainage to carry off the water, and sinks and ash-pits for reception of the filth, with sufficient stink-traps might answer the purpose of keeping the Town free from bad smells.

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There must be one to every house. The sinks would not require to be cleaned out more than once in four or five years.

The original cost would be about six or seven lacks, the same as the sewerage.

I think there would be a great saving in the expense of scavengering. Only about half the houses in Calcutta could communicate with the sewers, so as to discharge their filth by them, the other half would have to use sinks.

I think it impracticable to construct sewers so as to give the advantage of them to every part of Calcutta. They would fill up without scouring, and the fall is limited, it would not admit of sufficient current to scour out the smaller sewers.

There is this advantage in sewers, that you need not alter the levels of the present Roads and Streets materially, with surface drains the whole must be altered. This would necessarily cause an expense of five lacks. I do not see that the remaking the Roads with drains, would increase the expense of remaking them beyond what I have mentioned.

A great allowance must be made beyond these Estimates for contingencies unforeseen. I think all Estimates generally given should be doubled. My Estimate given in for sewerage and drainage, including contingencies, was fifteen lacks. Upon the same principle, I should Estimate a surface drainage at ten lacks, to which must be added the six or seven lacks for sinks. I should think the last a full allowance. I have taken it at twelve Rupees each house, and the houses at fifty thousand. I should think each item largely estimated, and the whole sum sufficiently ample. I think a considerable addition ought to be made to the fifteen lacks for sewerage. Nothing appears to me that would cause any material difference between the expense of the two plans, by sewerage and without sewerage. I think nothing can be done effectually and completely, under twenty lacks, by any plan.

I think that sum would cover every expense, and would be equivalent to a saving of five years' outlay in the repairs of the Roads. All the money would not be required at once. It would take five, six or seven years to do the work. It might not be possible by any of these plans to diminish the Establishments, but their efficiency would be much increased compared with the expense.

Adjourned to Saturday, 29th October, 1836.

No. 2.

Second Day.

Captain J. Thomson,
before
Municipal Enquiry,
2d Sub-Committee,
29th October 1836.

Town Hall, Saturday, 29th October, 1836.

CAPTAIN J. THOMSON, *examined*.

SECOND DAY.

Q. 11. There are Sewers, one under Government House compound, from East to West, and there is another; they have been thirty years formed—nearly the same as those proposed by Mr. Blechynden. Have you ever known or heard of their being filled up—they are strait Tunnels?—**A.** I am not aware of the Sewers under Government House compound and the other referred to in the question, having been filled up. But all the covered drains are great nuisances. The one under the Bengal Club, and Willis and Earl's house, particularly so.

Q. 12. There is a Tunnel running down Court House Street, crossing the Street at the corner of Tank-Square, and going zig zag. It has been dug twelve years. Is there any considerable deposit in this, so as to obstruct the passage of water?—**A.** I do not know any thing of the Tunnel running down Court House Street. I am not aware of the drain.

Q. 13. Do you not think, that Sewers something on the plan of those under existing management in straight lines, more scientifically built, with the addition of being forced by water from a raised reservoir, similar to that which Captain Thomson's plan also requires, and also taking advantage of the rise and fall of the tide, the different levels of the Salt Water Lake and the River, would be much less expensive than Captain Thomson's plan, and would be as efficient for the purposes of cleansing and draining?—**A.** The only difference between the proposed Tunnels, and my plan, is the use of the Tunnels. Those proposed by Mr. Blechynden, and partly executed, are I should say about three feet in diameter, and those I propose, are from 8 to 15 feet. Mr. Blechynden's would not be sufficient for the drainage, if no more in number than mine. If made of equal capacity by increasing the number, they would be much more than double the expense, nearly three times. If you give up the drainage by Tunnels, it must be provided for by surface drains, which again would increase the expense. The velocity of water necessary to scour out filth, is two feet in a second of time. The smaller the drain, the greater slope is required, to get that velocity, and the level being limited you cannot get the required slope in Calcutta, if the Tunnel is less than seven or eight feet in diameter. The first question with reference to the system of drainage, in reference to water falling from the heavens, is to ascertain the fall to be provided for. This must be assumed from observation only. In Britain it is taken at one inch. In Calcutta the drains parallel to the Circular Canal being dug, were capable of taking off $1\frac{1}{2}$ inch fall. I have hitherto estimated three inches, as the quantity to be provided for. This is the average actual greatest fall in twenty-four hours, the average of three consecutive days being taken. I am now of opinion that I may reduce the estimate to two inches, having ascertained

that the former quantity drained was $1\frac{1}{2}$ inch. There were complaints then of the drainage. The present drainage in Narculdangha drain is $1\frac{3}{4}$ inch. It is the worst drain in Calcutta. There are complaints of it. I think an addition of one-eighth part would be sufficient. It is impossible to answer with confidence at any particular quantity, as that necessary to be provided for—it is necessary to go upon a system, and in my opinion the two inches would answer.

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The Drains may be easily so formed, as that the quantity of water discharged in a given time, shall be as the cube of the depth, that is, if the depth of water in the drain is doubled, the discharge will be eight times the quantity in the same time.

Q. 14. If a number of Tanks were dug in the lower parts of the Town would not this be sufficient with proper slopes to them from the Roads, to draw off in all common cases, the surplus water which the Tunnels had not capacity to hold?—A. I do not think the formation of Tanks in the Native Town of Calcutta would be of advantage to the system of drainage, because there would be so much, mud fall into them.

Q. 15. Do you think the Native Town sufficiently supplied with wholesome water for the beverage, culinary, and household purposes of the inhabitants?—A. The price paid for one mussac of water (about 8 gallons) brought to the Streets, and sold there by water carriers, who make their livelihood of it, is a quarter of an anna, that is, 1-3d, penny English, at 2s. per Rupee. This is the lowest quantity I think allowed, as the average per head per diem in England, in calculating the necessary supply of water. In London the supply at present is nearly twenty gallons per head per diem. Constantinople is the only Town inhabited by persons of Eastern habits, that I know of, which is supplied with water, for household purposes only, brought by pipes or aqueducts into the Town. There the quantity allotted to each person is thirty-five gallons, supplied by aqueducts.

In Rome the supply is fully as much.

The Canal at Delhi supplies water for irrigation, as well as other purposes.

The water so sold in Calcutta is brought from the Tank, in Tank-Square, and is believed to be good and wholesome water. No other Tank water is so esteemed. The Hindoo inhabitants have their drinking water from the River, at an equal expense. It is brought by their own servants.

Adjourned to Saturday, 12th November, 1836.

No. 2.

Third Day.
Captain Thomson,
before
Municipal Enquiry.
2d Sub-Committee,
12th Nov. 1836.

Town Hall, Saturday, 12th November, 1836.

CAPTAIN J. THOMSON, *examined.*

THIRD DAY.

I am of opinion that Tanks could not be used with any advantage for purposes of draining. They would fill up in a season.

To prevent the Entally Canal from filling up, there is a large cess-pool made at the head of it. This cess-pool fills up every year, it is 200 feet long, 70 feet wide, and seven feet deep. The collection of mud here is from one drain only, the Dhurumtollah.

Q. 16. Would Tanks be of any use as temporarily relieving the drains from surplus water beyond what they could contain during a heavy fall of water, till such time as they could discharge themselves?—**A.** It would depend upon the size of the Tanks, proportioned to the quantity drained into them, and upon their being annually cleaned out.

A great many of the Tanks fill with water, without any surface water running into them, you could not depend upon more than three feet for difference of level. At the rate of a three inch fall, the Tank would receive the water which fell upon 12 times its own surface. This would be almost as nothing. There is at present more than 1-12th of the surface in Tanks in the Native Town.

It is a medical question whether Tanks are healthy for their neighbourhood.

There is a regular contract price for digging Tanks, independent of the price of the ground, well known.

They would certainly be the means of increasing a free circulation of air.

They would not be useful for supplying water to drink, because the inhabitants object to the water of particular Tanks. I mean the Bengallee Inhabitants chiefly, and the poorer class only, the richer Natives having Tanks of their own, or sending to such as are approved, as do also the Moosulmans and Christians, and others—except Hindoos.

If the Tanks were puddled or allowed to form naturally by the deposit of mud not disturbed by cleaning, a sound bottom impervious to the brackish water percolating, they would afford good drinking water, and I think they would be used by all, except the Hindoos. The other classes go only by the quality of the water.

The formation of Tanks would be absolutely necessary in order to get earth to fill up hollows. No system of drainage could be made without them.

The sum at which I have estimated generally the expense of drainage and sewerage, includes the total reformation of the Roads through the Town, the forming foot-paths, and the digging such Tanks as would be necessary for supplying earth to fill hollows.

No. 2.
Third Day.
Captain J. Thomson,
before
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2d Sub-Committee,
12th Nov. 1836.

It would only meet the expense of forming small Tanks occasionally where the Roads are low. My Estimate is upon the plan of reducing the level of the present Roads, so as to render the present Drains at their sides surface Drains, without altering the line of the Roads.

The principal present lines of Road, were formed eighty years ago: they remain of the same level now.

Not including the purchase of the ground. The abandoning the present lines of Roads and surface Drains along side of them, and forming new Roads and surface Drains, on the best system for lines of communication and a free circulation of air, and for a complete surface drainage, would be much cheaper, than the plan I have proposed in my Estimate of a total Expense of twenty lacks, which proceeds upon the keeping the same line of Roads and surface Drains, altering the levels as may be necessary.

The expense of altering the levels, preserving the present Roads and side Drains, would be about 4,20,000 Rupees, and to this must be added 3,00,000 for reforming the Roads, including side surface Drains, in all 7,20,000 Rupees.

The expense of an entire new line of Roads and side Drains would be 3,00,000 Rupees, to which must be added that of altering about one-fourth of the present Roads and Drains in order to suit the new levels, which would cost 1,00,000, in all 4,00,000 Rupees, being Rupees 3,20,000 less than the other plan; but this would fall greatly short of the expense of purchasing the ground necessary for the new lines.

The ground necessary would be about 880 Biggahs, which, at five thousand Rupees per biggah, would be 44,00,000 Rupees, for the surface occupied by Roads 40 feet wide and 20 miles in length.

If there were a good system of Police Regulations, so that encroachments and nuisances were prevented, I should be able to calculate the value of frontage for shops. At present there is no access to the real front, stalls being erected before it, over the Drain usually, and the value of the frontage destroyed.

In like manner, if there were a law similar to Acts of Parliament in England, for the compulsory sale and proper estimate of the value of land required for public purposes, I could estimate the value of the ground to be purchased. At present I can neither estimate the one nor the other.

In the first proposition it was proposed that the Sewers should bring water from the River for the purpose of watering the Roads and for extinguishing fires.

No. 2.

Third Day.

Captain J. Thomson,
before
Municipal Enquiry,
2d Sub-Committee,
12th Nov. 1836.

I think if the water were raised from the River by Steam Engines and distributed by means of the surface Drains by the Road sides, it might be done for perhaps half the expense, or be rendered doubly effectual for the same money.

The expense of the plan first proposed is included in my estimate of the Sewerage. The same sum would cover all the expense of Engines and keeping them up.

No. 3.

Town Hall, Saturday, 19th November, 1836.

Hon. Sir J. P. Grant,
and
Rustomjee Cowas-
jee, Esq.
before
Municipal Enquiry,
2d Sub-Committee,
19th Nov. 1836.

Hon'ble Sir J. P. GRANT & RUSTOMJEE COWASJEE, Esq. *Evidence.*

FIRST DAY.

We have passed through the greater part of the Roads and Lanes in the Native part of the Town, bounded by Loll Bazar, Clive Street, Mutchowa Bazar, and College Street; that setting out from Tank-Square we passed through Old China Bazar, past the Armenian Church up to Burra Bazar, through all the windings of which we passed as far as the Mint. From thence to the Portuguese Church, Moorgheehattah, along the Chitpore Road to Mutchowa Bazar and back, through Collootollah Road; that through several of the Lanes and Alleys we could not pass, the same not being wide enough for the admission of any wheeled carriage or cart; that the whole of this space, with the exception of some places near College Street, is most thickly inhabited; that the houses and shops adjoin, and though not lofty are sufficiently high, to exclude sun and air, the free circulation of the latter of which, is effectually prevented by the extreme narrowness, sharp angles, and perpetual tortuosities of the streets, few streets being more than a quarter of a mile in length in the same direction, and many not so much; none of the Streets, except those to be presently mentioned, much exceeding twelve feet between the front walls of the opposite houses, many being much narrower, and of this space from one foot, to one and a half foot in width, being occupied by a kennel on each side. These kennels are apparently two, or two and a half feet deep, with bricked sides, the bottoms filled with perfectly stagnant water and filth, and the tops covered at distances of from one foot, to two feet, and two and a half feet apart, with buildings from six to ten feet in length, which in a few places are the entrances to houses, but which in all other instances are the supports of the platforms used as shops, which platforms are erected immediately over the kennel, from one foot to three feet above it, the space between the Bridge and platform, being closed to the front, so that no part of the kennel is accessible for the purpose of cleaning it, but the abovementioned intervals of one, two, or two and a half feet in length, at various distances, of not less than six or more than ten feet from each other, while the whole stench freely escapes into the street and houses.

Rustomjee adds, that he has frequently seen the part of the Town above described during the rains, and that after an ordinary fall of rain, the kennels having no outlet, overflow, and cause the water to cover the streets to the depth of a foot or more, and that it sometimes takes a whole day to run off, seldom less

than eight hours, during which there is no passage but through this water, and the houses, (of which there are many) which are a few inches lower than the road, or street, have the lower part overflowed and rendered uninhabitable.

The wider streets above alluded to, are the following :

1st. The Chitpore Road, which is of a fair breadth, but in the greater part of its length, is encroached upon by shops, built over the kennels, or ditches, at the side.

2d. Matchowa Bazar Street, which is narrow at its entrance into Chitpore Road, being not above fifteen or sixteen feet wide apparently, and much encroached on; as it extends towards College Street and beyond, it becomes a spacious street. The continuation of it in the opposite direction towards the River, which is called Cotton Street, on the plan, is no exception from the number of narrow streets or lanes above described.

3d. Collootollah Street to College Street and beyond.

4th. Boytuckkhannah Street, Bow Bazar, and Loll Bazar.

The space above described is the most populous part of Calcutta, and forms the chief seat of its wealth, and place of the residence of all the Native Bankers, Merchants, and Tradesmen of Calcutta.

Town Hall, Saturday, 24th December, 1836.

Hon'ble Sir J. P. GRANT & RUSTOMJEE COWASJEE, Esq. *Evidence.*

SECOND DAY.

We again visited the Native parts of the Town but have nothing new to add to what has been described by us, in our former evidence recorded in the Proceedings of the Nineteenth of November last, except that in some places which we visited, there were nuisances of a worse description, and such encroachments on the public Roads, as to obstruct the passage of carriages, which the Magistrates appeared to take no notice of.

No. 3.

Hon. Sir J. P. Grant,
and
Rustomjee Cowasjee, Esq.
before
Municipal Enquiry,
2d Sub-Committee,
19th Nov, 1836.

No. 3.

Second Day.
Hon'ble Sir J. P. Grant
and
Rustomjee Cowasjee,
Esq.
before
Municipal Enquiry,
2d Sub-Committee,
24th December, 1836.

Town Hall, Friday, the 30th of December, 1836.

No. 4.

Mr. F. Tweedale,
before
Municipal Enquiry,
2d Sub-Committee,
30th Dec. 1836.

MR. F. TWEEDALE, *examined.*

Mr. Tweedale, before being examined, submits the following observations :

There are many houses in the Upper North Division of the Town in a very ruinous condition. Every rainy season houses fall, and persons sometimes are killed by this means, and others are severely injured. There were two or three instances last rainy season of houses falling upon huts that were built close to them, by which some people were hurt, but no lives were lost. In one of the instances in Manicktollah Street, two huts were destroyed by the falling of a house, and some people in them hurt. The huts belonged to poor people, who applied to the owner of the house for some remuneration; but they afterwards told the Overseer that he would not make any recompense, and he certainly made no haste to remove the bricks and rubbish to let the people rebuild their huts again. Most of the people are very much averse to pulling down old houses or walls, even when they have the means to do so, and when the danger is imminent; and in some cases will continue to live in them when it is by no means safe to do so. One great cause of injury to many of the houses is the allowing of trees to grow out of the walls, by seeds or roots having accidentally lodged in them, and the people seem to have some prejudice against rooting them out; for even when the roots have grown so large as to crack the wall and admit water freely to destroy it, still it is only in very few cases, that any notice is taken till the wall is completely destroyed. Most of the owners of houses in a ruinous state have been served with notice to remove the danger, but as it appears that they cannot be compelled to pull down old houses or walls, it is only in very rare cases indeed, that any attention is paid to such warning.

Calcutta, 30th December, 1836.

In answer to questions put by the Committee, Mr. Tweedale says—

The Trees growing out of walls is a frequent occasion, and an extensive cause of damage and of danger.

I have been told there is only one class or caste of persons who will remove these Trees, but the Native Members of this Committee can give better information in this matter than I can; as far as I understand, the Magistrates have no power, as the Law stands now, to cause the taking down of ruinous and dangerous houses or walls. I have known notices sent, but never remember one instance of their being enforced. I have known them summoned, and time granted them to remove the danger. In some cases the danger has been removed, in others not; sometimes they attend to the notice, in general not. I know one instance of the parties being fined (the owner) where persons were killed, fined, I think, by the Magistrate, but am not sure whether by him or by the Supreme Court. I never knew another instance of the parties being fined. Have not known many

instances of people being killed, but do of many people being hurt. Do not know whether the parties injured petitioned the Magistrate. They applied to me—Women—I directed them to petition the Magistrate.

No. 4.
Mr. F. Tweedale,
before
Municipal Enquiry,
2d Sub Committee,
30th Dec. 1836.

There are many houses fall in my Division—I cannot speak to the rest—I think eight fell—parts of them during the last rainy day : I think that number was reported to me, and I saw a good many of them—All—where there was likely to be much mischief occasioned.

The Magistrates do summon and fine, when Drains are stopped or the Roads impeded by the rubbish, unless it is speedily removed.

I have seen them often summoned in other cases, but I think, to the best of my recollection, not fined.

The houses that fall are mostly built of brick and clay, instead of lime mortar ; but I have seen them fall built of lime mortar.

I think, to the best of my remembrance, the houses of clay mortar are more subject to these trees growing in the walls—They are very subject to it.

The owners are very backward in removing dangerous houses, and very dilatory in removing ruins that have fallen.

I have never heard of any survey made by order of the Police to find out houses that are in a dangerous state.

It is my duty, as I consider it, to report such as I observe in a dangerous state, and I have known the Superintendent examine such houses, as I have reported, but I never saw any repairs made by order of the Magistrate in consequence, unless the people did it themselves.

I never knew it to my recollection done, in opposition to the will of the proprietor.

Town Hall, Thursday, 23d February, 1837.

Mr. I. A. Ryper, examined.

Am Apothecary at Ghurranhatta Dispensary. Have been so for eleven years. Have had extensive opportunity of observing the state of salubrity of the Native part of the Town, and of the diseases that prevail among the Inhabitants.

I think it at present healthy, not generally so. We have at the Dispensary from two hundred to two hundred and fifty Patients daily, including old and new patients—about fifty or sixty new patients daily : They generally remain fifteen or twenty days under our medical care, sometimes a month, according to the diseases.

No. 5.
Mr. I. A. Ryper,
before
Municipal Enquiry,
2d Sub-Committee,
23d Feb. 1837.

No 5.

Mr. I. A. Ryper,
before
Municipal Enquiry,
2d Sub-Committee,
23d Feb, 1837.

The most usual diseases are bowel complaints, remittent and intermittent fevers, eruptions of the skin, and syphilitic eruptions, dysentery and rheumatism, and a great many cases of spleen, not many of liver.

I do not enquire from what part of the Town the patients come, and therefore cannot say in what part, any of these diseases are most prevalent.

I believe that in general cures are effected. Many of them come to inform me that they are cured : About one-third of those treated come to inform me of their having recovered.

I cannot know whether the other two-thirds have been cured or not.

About one-third cease to return for advice before, I think, they can have been cured.

Of this one-third, my conclusion is that they have not been cured.

Of this one-third, about one-third may be cases in which the disease though not cured, has been alleviated, which may account for the patients not returning ; but in the remaining two-thirds of these patients who do not return, the disease has not even been alleviated.

I have no means of knowing what becomes of those who do not return.

The bowel complaints, fever and dysentery, and cases of spleen, are generally likely to terminate fatally if the disease is not cured.

About one-third of the patients labouring under these diseases likely to terminate fatally, do not return for advice after having come to consult me.

My opinion is that those patients must have died.

I do not attribute their not returning to disinclination. I attribute it in many cases to the disease disabling them from coming, to their poverty not affording them the means of being carried there, and to their distance.

There are many cases in which they send for medicines.

I generally give them a ticket.

It is a disadvantage so great, as to interfere very materially with the probability of cure that I have not the opportunity of seeing these patients at the time of renewing my prescriptions.

The persons who send for medicines, without returning personally to the Dispensary, are included in the one-third I have mentioned before as not returning.

I have no better means of knowing whether these recover, than whether those do, who do not send for medicines.

There are a great many of those who labour under these dangerous diseases who neither return nor send for medicines.

Of those labouring under these dangerous diseases, who continue to present themselves personally at the Dispensary, about half are cured, and about half die.

In the cases of bowel complaints and dysentery, the patients withhold coming to the Dispensary, till the disorder is too far advanced to admit of a remedy.

They form a large proportion of the dangerous diseases.

In cases of fever, both remittent and intermittent, they generally come in time.

In cases of spleen, they generally delay till too late.

I have a few cases of cholera. The patient is generally cut off before he can be taken to the Dispensary.

I attribute the bowel complaints and dysentery, generally to the living in a damp house, and eating unwholesome food.

The dampness of the houses proceeds from the marshy ground in which they stand.

This applies generally to the Native Town. There may be places to which it does not, though I am not able to mention them.

I have not much occasion to traverse the Town, and do not do so.

I never attend the patients at their own houses.

I know enough of the situation of the Native houses, to know that it is likely to produce these fatal complaints of the bowels, and I know that damp residences very generally produce them.

The rheumatisms are produced partly by venereal disease, and partly by damp residences.

I am of opinion that the want of drainage has a considerable effect upon the amount of disease in the Native part of Calcutta.

I think the Native part of Calcutta less healthy, than Towns in other parts of Bengal.

No. 5.

Mr. T. A. Ryper,
before
Municipal Enquiry,
2d Sub-Committee,
23d Feb, 1837.

No. 5.

Mr. I. A. Ryper,
before
Municipal Enquiry,
2d Sub-Committee,
23d Feb. 1837.

I have not seen much of other parts of Bengal,—I speak from what little I have observed and from what I have heard.

I think the greater unhealthiness of Calcutta is produced by the want of drainage and want of carrying away the filth.

Of the patients at the Dispensary, very few are females ; about one-third of the patients are females—Hindoo, Moosulman and Christian: Fewer Hindoos, very few, except of the lowest class. The most are Moosulman, not a great many Christians.

There are not many women come with dysentery or bowel complaints.

They are not so subject to these complaints as the men. They do not expose themselves so much as the men do.

We have so very few cases of women, that I cannot properly form an opinion regarding their comparative liability to disease.

Our having so small a number of female patients is owing to their disinclination to appear so publicly as they must do.

We have a private apartment in which they might be received, but no respectable Hindoo or Moosulman woman, would appear before me or any stranger, and the low class of women who come, are careless who may be present at their statement of their case.

We have no female attendants at the Dispensary.

I do not think if we had, that any higher class of women would come to the Dispensary, but I have no means of forming a correct opinion.

The women generally come for relief in cases of rheumatism, and Prostitutes in venereal cases.

There are not many of the latter description. We have not many cases of women under fever.

We have a few children brought for advice, generally for teething and bowel complaints, and sometimes fever, and sometimes spleen.

We generally succeed with the children, not many of them cease to be brought before they are cured.

This confirms me in the opinion, that the grown persons ceasing to come, proceeds more from disability than disinclination,

Town Hall, Saturday, 25th February, 1837.

**FREDERICK HARINGTON BRETT, Surgeon to Governor General's
Body Guard, *examined.***

No. 6.

Frederick Harington
Brett,
before
Municipal Enquiry,
2d Sub-Committee,
25th Feb. 1837.

I have been for six months in attendance on the Body Guard at Ballygunge. I have heard read Mr. Martin's Statement in his Printed Note of the Medical Topography of Calcutta. I entirely agree in his opinion of the necessary effects on health, of such stagnant pools and receptacles of water as he describes. There are now a great number of pools and pits of water in the lines at Ballygunge, and the exhalations proceeding from dead vegetables and animal matters, is still very considerable, and causes remittent fevers and general unhealthiness. Many of the men labor under congested and enlarged spleen, and the Grass-cutters and Camp-followers whose constitutions are not so vigorous as those of the Sepoys, and are consequently more susceptible of disease, and who are not so well supplied with the comforts of life, are particularly liable to severe attacks of remittent fever and dysentery.

The Sergeant Major's residence is contiguous to two or three of these pools, and to a Tank which yields a most pestilent odour, and lies immediately under his Bungalow. In consequence, his Children are frequently attacked with fevers of a very obstinate character, although their parents are both of a robust constitution, the Children are exceedingly squalid and unhealthy.

These fevers and dysenteries are decidedly attended with great danger. There have not been many cases of death since my arrival, but those attacked are subject to relapses, and the Sepoys do not recover their health but by obtaining leave of absence, and going to the Western Provinces—a more congenial climate, and less exposed to miasma, and from which part of the country the majority originally came.

I do not state the Sepoys themselves to be generally unhealthy, so much as the Grass-cutters and Camp-followers: very few of these are Bengallees I believe.

I have served as a Medical Officer for eleven years in the Western Provinces: I remark a decided difference in the healthiness of the Sepoys serving there, and of the Body Guard (who come from the same Provinces) stationed here.

I attribute the difference between their healthiness and that of the Sepoys serving in the Western Provinces, and the remarkable unhealthiness of the Camp-followers here, partly to the general circumstances of the climate of Bengal, and partly to the several circumstances detrimental to health, which I have mentioned, viz. the want of good drainage and the stagnant pools, and quantity of miasma created

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 before
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by these causes. Whenever I have had an opportunity of witnessing diseases amongst the Natives of Bengal, which has only been at Ballygunge, and in the centre of the City of Calcutta, I think these causes prevail with great intensity in both situations.

Of the 1027 cases which occurred within the period of two months at my Hospital in Calcutta, 401 were medical cases, and dysenteries, remittent and intermittent fevers, affections of the spleen and rheumatick attacks, constituted 266 of that number, which would be greatly diminished by good drainage and ventilation.

Early attention to their attacks by means of a well regulated Hospital, united to good drainage and ventilation, would go far to prevent the recurrence of these diseases.

I think so decidedly, even in the climate of Calcutta.

For want of such a receptacle, numbers of the laboring classes and their families, although their diseases are at first of a slight nature, perish—a vast majority of those attacked perish for want of prompt attention, exposure, and destitution of the comforts, and in many cases of the necessaries of life.

The great majority of the cases are at first of a slight nature, and would be capable of easy cure by proper medical assistance.

I speak upon the experience of two months constant and attentive observation since the establishment of my Hospital—I have already given in to the Committee a description and account of my Hospital.

I have pretty generally during these two months visited either personally or through my Native Doctors, those whom I could not receive into the Hospital, and whose cases were serious.

I have thus been acquainted with the situations and circumstances, in respect to salubrity of the habitations of many of the native inhabitants—the labouring classes in about the centre of the Native Town.

I observed universally a want of cleanliness, drainage and ventilation in a great and remarkable degree in all these respects.

The necessary consequence is the fever and other complaints which I have mentioned—I think these effects are pretty general in Calcutta.

I think the general prevalence of the fevers and other disorders I have described is much greater generally all over Calcutta, than that of typhus or typhoid fever in the most unhealthy part of Westminster.

When I was attached to St. George's Infirmary, London, it so happened that it was my duty for two years to attend the sick at their own houses in some of the most unhealthy parts of St. George's Parish, St. Giles's, Pancras and Marylebone—the diseases were more fatal, but their number not so great as they are generally all over the native town of Calcutta, at this the healthiest time of the year.

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Frederick Harington
Brett,
before
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2d Sub-Committee,
25th Feb. 1837.

I attribute the excessive prevalence of disease in the native part of Calcutta, partly to the general effect of the climate, but in a much greater degree to the want of drainage, ventilation and cleanliness.

By want of cleanliness, I mean the want of cleansing away of the filth from the houses.

I am of opinion that Dispensaries, in whatever number established, would not meet the evil arising from the want of medical assistance. The reasons are, that the diseases cannot be watched, and if the first dose is not successful the patients lose their confidence.

Second. If they receive a purgative dose, which is the general commencement of the treatment of such cases as usually arise, they will take half or a third of the dose, if they take it at all, which instead of good, does them harm, exciting probably nausea and uneasiness, and they never come again. Their natural prejudice against European medicine is thereby confirmed. The Native Doctors keep up this prejudice, and it frequently happens while they are taking your remedies partially, they are taking simultaneously the compounds and nostrums of their own native Fackeers or Sados. The consequence is, that acute diseases generally terminate fatally—and remittent and intermittent fevers lapse into obstinate chronic complaints, which sooner or later terminate existence or embitter the remainder of it. The extent of these chronic disorders is very great indeed.

Third. The Apothecaries who conduct those Dispensaries cannot be supposed to possess that thorough knowledge of their profession, which would render them skilful practitioners, though they are probably as well informed as it is possible for those to be who have not had the advantage of a scientific education: mistakes are in this situation unavoidable, some of them very serious: in medical cases mistakes are unavoidable, and must be frequent, and occasionally serious; though they are more likely to be serious in surgical cases.

Fourth. All the more important remedies which have the greatest controul over diseases, and the effects of which require to be watched cannot be employed systematically. Your efforts fall into disrepute, and the aversion to resort to European medical aid is increased.

Fifth. The want of power to regulate diet is a matter of some importance, though not so great as in the case of Europeans, the native diet being more simple. But there are cases in which their usual articles of diet are very prejudicial. I may mention, as instances, their propensity to eat sweetmeats mixed up

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Frederick Harington
Brett,
before
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with ghee, and indigestible substances roasted, and dry rice. Sour curd and whey, while labouring under fever and indigestion. On the other hand there are many things which we should wish to administer at stated times of the day, which they cannot command, and which it is impossible to distribute by means of a Dispensary: many which you cannot distribute at all, and others which you cannot distribute so prepared as to be wholesome, or trust them so to prepare; for instance, the simple article of sago and port wine, arrow-root, and a great number of others which I could mention.

In convalescence there are many things on which their safety or relapse depends. I may mention, as an instance, the case of a patient on whom I performed a serious operation of tying the carotid artery. When out of danger from the operation, she was nearly dying of dysentery from a quantity of unwholesome food which had been given her unknown to me, and throughout the management of her case she required a variety of articles of diet, which she could only have possessed under my immediate observation and direction.

I think the subject of the comparative expense of the relief afforded by means of Dispensaries and of an Hospital is fully treated in the paper I have delivered to the Committee.

I have there stated, and I trust demonstrated, the infinitely greater amount of good afforded by an Hospital, and therefore, with reference to that good, the expense would be less of an Hospital.

I am decidedly of opinion that the expense now incurred by the two existing Dispensaries, would be sufficient to support a thriving and extensively beneficial Hospital.

If it were exclusively for medical cases, it would be yet more extensively beneficial for the cure of those cases; but from the prejudices of the Natives, I apprehend they would not resort to it, unless it also embraced surgical cases, and I am decidedly of opinion that embracing both, it might be supported at the expense of the present Dispensaries, and would be very much more extensively beneficial than they are, in the case of medical cases alone.

The prevalence of disease amongst the lower order is very striking to an European medical man in all great Cities in India, but much more so in Calcutta.

I attribute this to the climate generally in part, and in a greater measure to the local circumstances. I have mentioned the want of drainage, ventilation and cleansing, to which the natural dampness of the climate gives additional effect.

I may illustrate the effect in the climate of Bengal in a plane, peculiarly hot from the radiation, from the number of buildings in it, of drainage, ventilation and cleansing, by reference to the Garrison of Fort William. There is the strictest attention there, to those points, and to the removal of all exuberant vegetation.

The consequence is, that the general health of the Native Camp-followers in the Fort, is remarkably good.

I do not think the Sepoys afford a good ground of comparison with the Native population of Calcutta, they being Up-Countrymen, of good constitution, and well provided with every comfort.

I speak from the experience of five months during the most unhealthy season of the year that I had charge of all the Native Establishments of the Fort. The number of diseases during that time was very small indeed, very few remittent fevers or dysenteries, or cases of spleen, or any diseases.

I attribute the difference to the difference in drainage, ventilation and cleansing.

Town Hall, Monday, 27th February, 1837.

MODOOSOODUN GOOPTO, KOBEERUTTUN, *examined.*

FIRST DAY.

I have practised Medicine in Calcutta for twelve years among the Native population. I was educated in the Sanscrit and English College for six years. I was afterwards Professor of Sanscrit Medicine there. I had before coming to the College been instructed in the Native system of Medicine, under Khableram Kobecraze, a learned Native Doctor. I also visited patients in the villages under his instructions. While attending the Sanscrit College, I attended the lectures of Dr. Tytler and Dr. Grant upon Anatomy and the theory and practice of Medicine, and Surgery. I attended their lectures for about five years, during the two last of which, I was their Assistant. The duty of Assistant was to explain to the Students (who were all Natives) the English terms in Sanscrit and Bengallee. It is now two years since I left the College. Before entering the College I had begun to practise, and I continued to practise during all the time I was in the College, and have done so since.

My practice has been among the respectable, the middle and the poorer classes of Natives—most among the middle classes. I have seen a great deal of the diseases of the lower classes.

I have practised among all classes in every part of the Native Town, very little in the suburbs, but I receive every day statements of the diseases and treatment of the Natives in the villages from the Native Doctors.

I am now Pundit of the Medical College; my duty is to assist the Professors Drs. Goodeve and O'Shaughnessy in explaining to the Students the Anatomy which has formed the subject of the lecture, after the lecture is over. I explain the names of the diseases in Bengallee, and the qualities of Native Medicines, according to

No. 6.

Frederick Harington
Brett,
before
Municipal Enquiry,
2d Sub-Committee,
25th Feb. 1837.

No. 7.

First Day.
Modoosoodun Goopto,
Kobeeruttun,
before
Municipal Enquiry,
2d Sub-Committee,
27th Feb. 1837.

No 7.
 First Day.
 ModoooodunGoopto,
 Koberuttan,
 before
 Municipal Enquiry,
 2d Sub-Committee,
 27th Feb. 1837.

my experience. Two or three times in a month I go to my native village, Bayday-patty, about sixteen miles from Calcutta, and stay two or three days or a week, according as I obtain leave. When I go there, I practise among the Native inhabitants. I think from the various sources of information I have mentioned, I can give the Committee a pretty accurate and full account of the diseases prevalent among the Natives in Calcutta.

Fevers are the most prevalent diseases, bilious, remittent and intermittent—enlargement of the spleen is the general termination of the two last descriptions of fever—Diarrhoea, Dysentery, Dyspepsia, Rheumatism, and Venereal disease, these are the most prevalent diseases in the town among the Native population. There are very few inflammatory diseases. There are inflammations of the liver and of the brain, but very few. There are other inflammatory diseases but very rarely.

The fevers, except the intermittent, are dangerous to life, and certain to be fatal if not attended to medically. The intermittent fever, according to my observation of it, produces Diarrhoea, does not produce an enlargement of the spleen; but if it is attended with Diarrhoea, it almost always produces an enlargement of the spleen.

The Diarrhoea following intermittent fever, is generally fatal if not medically attended to. The enlargement of the spleen is not generally fatal of itself, but if not cured, produces dyspepsia, oedematous swellings of the legs, and hands, and loins, and anasarcha, which are fatal. Dysentery is always dangerous, and if not medically attended to in time, always fatal.

Nearly two-thirds of the Native population in the Town, have Dyspepsia. It is not of itself fatal, but produces debility, which predisposes to other diseases, Diarrhoea, Dysentery, and Piles.

Rheumatism is very frequent—the patients applying for medical assistance labour under it. It often arrives at a height among the labouring classes, to prevent their obtaining their bread.

There is a great deal of venereal disease, chiefly amongst the poorer classes; we very seldom see it in its beginning, the patients try to treat it themselves and sometimes they cure it, but when the venereal poison is absorbed into the system, it produces all sorts of sores, cariousness of the bones, leprosy, &c. We very often meet with it in these aggravated forms, when not more than ten cases in one hundred, are capable of cure.

I visit women as well as men—Hindoo women.

I visit very few Mussulmans, and still fewer Mussulman women.

Mussulmans are attended by Hindoo physicians, as well as by those of their own religion. They have no objection to be so. My grandfather was family physician to the Nowab at Hooghly.

The Hindoo women are not so subject to any of the diseases I have mentioned, as the males.

They are subject, though not so frequently as the men, to remittent and intermittent fevers, and all their consequences—to Diarrhœa, Dysentery and Dyspepsia,—not very subject to Rheumatism. But they are very subject to Hysteria, and irregularities of the menses.

They suffer much pain in parturition, chiefly from the youth of the mother, but it is very rarely attended with danger to the mother, unless there be some accident, as a premature or a cross birth, or unless fever ensues after the birth; in two, three, four, or five days the mother generally gets fever that is fatal without proper treatment, attended with pain in the belly, immoderate sweating, headache and giddiness, and inflammatory fever.

In such cases I am very often called. These symptoms could generally be prevented, if the woman was attended from the beginning by a skilful person.

The Midwives who attend them are perfectly ignorant of their profession.

The danger that occurs is partly from their ignorance, and partly from the Native customs.

Adjourned to Saturday, March 4, 1837.

Town Hall, Saturday, 4th March, 1837.

MODOOSOODUN GOOPTO, KOBEERUTTUN, *examined.*

SECOND DAY.

The woman after delivery is placed in a small damp room, very ill ventilated, with one small door only, no window or opening in the nature of a chimney. The door is always closed. The room is in a corner of the compound. From the moment after delivery wood fires are kindled in different parts of the room, sometimes two, sometimes three. The smoke is allowed to find its way through the walls and roof. The room is kept at a great heat. I think it cannot be below ninety degrees of Fahrenheit. The room is a temporary hut of mats and bamboo, thatched with straw or grass, in a corner of the compound, detached from the house, (the woman during such period being considered impure,) and generally kept for the purpose of the woman of the family being delivered in it. This is the case with wealthy natives, who have substantial houses for dwelling in, except a few, who do not observe this custom.

During the first three days, the woman is given a powder made of stimulating spices, as black pepper, long pepper, and dry ginger, after three days she gets

No. 7.

First Day.
MODOOSOODUN GOOPTO,
Kobeeruttun,
before
Municipal Enquiry,
2d Sub-Committee,
27th Feb. 1837.

No. 7.

Second Day.
MODOOSOODUN GOOPTO,
Kobeeruttun,
before
Municipal Enquiry,
2d Sub-Committee,
4th March, 1837.

No. 7.

Second Day.

ModonsoodunGoopto,
Kobeeruttun,
before
Municipal Enquiry,
2d Sub-Committee,
4th March, 1837.

the same ingredients, made into a paste with hot-water and boiled down. They always take these things, as an invariable custom, whatever their state may be, and without consulting any medical man, native or other, although in many cases it is extremely prejudicial, and if there is any tendency to fever, dangerous.

Medical men are never called in, unless the woman is apparently in danger.

Three or four women out of twenty die of fever and tetanus produced by this treatment, in six, or eight or ten days after parturition.

The prejudices in favour of these customs are so great, that a medical man would find it very difficult to prevent their being followed.

I think these prejudices are as strong as ever, among the bulk of the people, but there are some families which are exceptions, though these are very few.

My observations relate to Hindoos only.

If we had a sufficient number of well qualified female Hindoo Midwives, whose charges were very moderate, I think they might accomplish a great deal by good advice.

If they were seen to succeed to the extent of reducing the number of deaths from four or five out of twenty, to one or two, there is no doubt that the Natives would apply to them for advice and would follow it.

From my experience, and what I know of the Natives, I have no doubt at all of this.

The customs I have mentioned are not connected in the opinions of the people with any religious precepts or observances, except the having an apartment for women in childbirth detached from the house.

It might be as airy and well built, and spacious and cool, as might be desired. Religious opinions have nothing to do with any of these matters. But all women, except Braminee, remain impure for a month—Braminee women for twenty-one days.

If an Hospital with a lying-in ward were established, with proper Hindoo Midwives and attendants, a great number of married women of the inferior castes would be happy to avail themselves of it, and many lives would be saved by this means.

Such an Hospital united to a class in which Native Hindoo women might be instructed by an European Professor of Midwifery, well acquainted with the vernacular language, would be attended with extensive beneficial effects.

Employment would be afforded for a great number of Midwives in such an Hospital. The number of women taking advantage of the institution would be such, as to afford employment for a great number of Midwives.

Such women so instructed and employed, would readily find employment at a moderate charge among Hindoo women of all castes and ranks, at their own houses, by which I am well assured, many of their lives, and those of their children, would be saved.

These Midwives would remain in attendance upon the lying-in woman and would see that what the Doctor prescribed was administered, and would keep up the courage of the woman, and prevent to a great degree the injurious treatment and practises to which they are now subjected.

Neither the Hindoo women, nor their families have at present any objection to their being attended by an European Doctor, except on the score of expense. But the misfortune is, that there is no security that what he prescribes is administered: educated Hindoo Midwives would remove this difficulty.

The Government maintains a certain small number of Native vaccinators under the superintendant. They vaccinate Native children in Calcutta, at their parents houses without any expense. The Natives had originally a great prejudice against vaccination. The children were almost all inoculated for small pox before these Native vaccinators were established, by Brahmins generally, who went about for that purpose.

The prejudice against vaccination in Calcutta has almost entirely subsided since the establishment of Native vaccinators about twenty years ago in Lord Minto's time—the Brahmins are now hardly ever seen.

I have no doubt that if Midwives were educated and supported in the manner above mentioned, so as to be able to attend at Native houses for small fees, the result in extirpating the present mischievous system in the treatment of lying in women would be the same.

Children from the time of their birth are subjected to great danger from the circumstances to which they are exposed as above mentioned, in common with their mothers, except that they are not drugged with spices. They are kept in the same apartment—the child is also impure for the same time.

The heat and confined air produces irritation in the constitution of the child and fever and tetanus. The treatment of the mother has very bad effects upon her milk, and this also disorders the child—there are not many children who die from these circumstances, but it injures the constitution materially. I know that the children of the Hindoo inhabitants of Bengal are generally weakly and that they are subject to several diseases, hooping cough, (which I consider in this Country not an infectious disease,) dyspepsia, diarrhoea, dysentery, and all the fevers before mentioned, I do not see in the Town of Calcutta any children that are in perfect health.

Adjourned to Wednesday, 26th April, 1837.

No. 7.

Second Day.
Moodosoodun Goopto,
Kobeeruttun,
before
Municipal Enquiry,
2d Sub-Committee,
4th March, 1837.

No. 7.

Town Hall, Wednesday, 26th April, 1837.

Third Day.
 MODOOSOODUN GOOPTO,
 Kobeeruttun,
 before
 Municipal Enquiry,
 2d Sub-Committee,
 26th April, 1837.

MODOOSOODUN GOOPTO, KOBEERUTTUN, *examined.*

THIRD DAY.

Q. 1. To what circumstance in the situation of the Town do you attribute the prevalence of these diseases?—*A.* To the narrowness of the Streets, and the Kennels being full of dirty water, intermixed with putrified vegetable and animal matter.

Q. 2. The Committee have understood, and believe the opinion is general that putrified animal matter is not prejudicial to health?—*A.* They are very offensive and I believe prejudicial.

Q. 3. Are the Drains generally offensive in Calcutta?—*A.* Yes, particularly Burro Bazar, Machowa Bazar, Kolootollah, and Jorasankow.

Q. 4. Do you observe any difference in the health of the inhabitants in different parts of the Town?—*A.* Yes, very great.

Q. 5. Are the places you have mentioned the most unhealthy?—*A.* Yes.

Q. 6. Which do you reckon the most healthy part of the Town for Native inhabitants?—*A.* Baug Bazar, Bar Simlah and Shambazar.

Q. 7. To what do you attribute their greater degree of salubrity?—*A.* Because these places are very thinly inhabited, the Roads are broad and the Tanks good.

Q. 8. What do you think of the salubrity of the water which the Natives are generally compelled to drink?—*A.* They generally drink Ganges water, I mean only the middle and higher classes—the inferior classes drink what is nearest—the better classes are prejudiced against any but Ganges water, many of the higher classes drink Tank water from the higher parts of the Town.

Q. 9. Do you think generally that the Hindoo inhabitants have very strong prejudice against drinking any but Ganges water?—*A.* I do not think the prejudice very strong.

Q. 10. Do you think the Ganges water wholesome?—*A.* I think not in Calcutta.

Q. 11. Do they take any pains to draw the River water during the ebb?—*A.* Yes, they do, they take it at the time of the year when it is least salt and on the 10th day of the Moon—some bring it from Hooghly and Culna.

Q. 12. Is the Tank water to which the common people have general access wholesome or not in your opinion?—*A.* The water of the Tanks in the Native

part of the Town is generally unwholesome, and some very much so. I do not find any good Tank in the Native part of the Town.

Q. 13. Do they draw much water from wells?—*A.* Only for washing, not for drinking or preparing food.

Q. 14. Do you think that the water which they are compelled to drink has any influence in the production of the diseases you have enumerated?—*Yes*, very great, it is the first cause of Dyspepsia.

Q. 15. Would you attribute the prevalence of these diseases more to the water, to the want of ventilation or the want of drainage?—*A.* All are injurious, the water most so, the want of ventilation the next, then the drainage—the Natives are accustomed to live crowded, and therefore do not suffer so much from want of air.

Q. 16. Are their houses generally in damp situations?—*A.* Yes.

Q. 17. Do you attribute much of their diseases to that cause?—*A.* Yes, intermittent Fever and Rheumatism.

Q. 18. In regard to the water of the Tanks do you know of any wholesome Tank in Calcutta?—*A.* Yes, in Nobin Sing's Garden, is a good Tank, and the Lolldiggee and some of the Chowringhee Tanks are good.

Q. 19. Do you think the New Tanks wholesome?—*A.* No, they are supplied by Drains.

Q. 20. You are aware that there is a very large and filthy Drain which empties itself into the Lolldiggee?—*A.* No ; I never heard of it.

Q. 21. Are the Tanks you have mentioned as wholesome, deep or not?—*A.* The Tank in Sookeas' Garden is deeper than usual.

Q. 22. From your observation of the state of health in the most healthy parts of Calcutta, do you think that if proper ventilation, proper drainage and a supply of wholesome water were provided, Calcutta might be rendered a healthy place?—*A.* I have no doubt it might.

Q. 23. Do you think that the circumstances you have mentioned, contribute to produce Cholera?—*A.* Yes, unwholesome water, bad smells and exposure to sun, cold and night air, are amongst the causes of cholera, and drinking water heated by the sun.

Q. 24. You are aware that there is a great deal of jungle in the neighbourhood?—*A.* Not much in the most populous part of the town, but a great deal in the Suburbs, which I do not think affects the town on account of its distance.

No. 7.

Third Day.
Moodosoodun Goopte,
Kobeeruttun,
before
Municipal Enquiry,
2d Sub-Committee,
26th April, 1837.

No. 7:
 Third Day.
 Mednosoodun Goopto,
 Koberattun,
 before
 Municipal Enquiry,
 2d Sub-Committee,
 26th April, 1837.

There are many small private tanks which contain bad water, and produce *miasmata*, and many old tanks are filled up with filth which causes a bad smell for four or five months, and is injurious to the health of the neighbourhood.

Q. 25. Do you consider the dust injurious to health?—A. Yes, it produces cough and ophthalmia.

Q. 26. Is there much ophthalmia?—A. Yes, in the hot season from the dust.

Q. 27. Is it difficult to cure?—A. Sometimes very difficult.

Observation.—The unwholesomeness of the Ganges water is increased by the dead bodies floating in the stream and the filth thrown in.

Q. 28. Do you think putrid fish unwholesome?—Yes, some kind of fish, chingree and pootee, and taryah and boal, when putrid are very unwholesome.

Q. 29. Are you acquainted with the state of the public privies?—A. They are not properly cleaned, there are many of them.

Q. 30. Is any attention paid to cleaning them?—A. The Police does not attend to it, if the peons are paid.

Q. 31. Do you think that circumstance injurious to the comfort and salubrity of the town?—A. Yes.

Q. 32. Do you know any thing of the state of the Mahometan, Native and Christian burying grounds?—A. I do not think they produce any injury to health, the graves are so deep.

Q. 33. Do you know any thing of the state of the bazars?—A. The Native bazars are only for fish and vegetables—they are very dirty, and full of putrified fish and vegetables.

Q. 34. Are they well drained?—A. No, they are not *puckah*. The provisions in the bazars are generally bad—the shopkeepers cheat in rice, dhall, ghee, &c. by mixing.

Q. 35. Is that known to the purchasers?—Yes, many would give a good price, but they cannot obtain unadulterated provisions—sweetmeats are bad and unwholesome, the old are mixed up with fresh, &c.

Q. 36. Do you think that the unwholesome food of the inhabitants is a great cause of their diseases?—A. Yes, new rice is mixed with old, which is very unwholesome—new rice is difficult of digestion.

Q. 37. Would it be difficult to detect by inspection in a shop, the adulteration of rice, &c.?—**A.** There is no difficulty by washing, but the purchasers do not generally take the trouble.

Q. 38. Would it be difficult for the Police to detect such fraud?—**A.** Not at all.

No. 7.
Third Day.
Modooocoon Goopto
Koburuttun,
before
Municipal Enquiry,
2d Sub-Committee,
26th April, 1837.

Town Hall, Saturday, 4th March, 1837.

Dr. W. GRAHAM'S EVIDENCE.

Subjects for Enquiry within the Native Town and Suburbs, submitted to Dr. W. Graham, with his replies thereto.

No. 8:
Dr. W. Graham,
to
Municipal Enquiry,
2d Sub-Committee,
28th Feb. 1837.

Q. 1. General appearance of the locality?—**A.** Level—Covered with huts of various fabric and form, with a sprinkling of puckah houses, interspersed with tanks of different magnitude, drains, roads, and gullies.

Q. 2. Inequalities of ground admitting lodgement of water?—**A.** From inefficient Police surveillance, many inequalities prevail; every individual imagining that he has a right to do what he pleases with his own.

Q. 3. State of the drains and which kind of drain is best suited to the salubrity of the locality, whether open or covered?—**A.** Impossible to be worse than they are at present—rudely constructed, without any knowledge of the principle of draining, the centre of the conduit being in many places below the level of the extremities. A large covered drain, with a small surface one, is what I deem most conducive to the salubrity of the locality. Even on the Chitpore Road, the drains are so useless after a heavy fall of rain, as to render a canoe the preferable mode of transit: I have observed the road impassable after a fall of less than an hour's duration.

Q. 4. Quality of the water in use amongst the natives and whether abundant? **A.** Bad and defective. In many places not to be obtained, except from a great distance, and that tainted, and in small quantity.

Q. 5. State of the streets and roads, in respect of cleanliness, ventilation and other things affecting salubrity?—**A.** The roads are improving under the new system, but the dust in many parts of the town from them is most pernicious and offensive. At certain seasons of the year also, large masses of vegetable matter are suffered to accumulate on them, and to remain until decomposition has taken place. In the narrow lanes, the residents throw every nuisance into the imperfect drains, and not a morning passes without witnessing numbers sacrificing to Cloacina into these hotbeds of disease. Most of the roads (lanes) run from east to west, and consequently during the south-west monsoon ventilation is at a stand.

No. 8.

Dr. W. Graham,
to
Municipal Enquiry,
2d Sub-Committee,
28th Feb. 1837.

The consequence is of course disease and often times to an alarming and distressing extent, with such materials for its production around them. Street conservancy, bad.

Q. 6. Dwellings of the Natives, whether crowded into dense masses or separated so as to admit a free ventilation, and the effects upon health, what kind of hut is considered by you the most healthy?—A. The lower classes are undoubtedly gregarious—consequently their dwellings are invariably crowded with dense masses, without reference to form or ventilation. I should accord the preference for the sake of coolness and cleanliness during our ardent heat, to the mud hut, so common in the Upper Provinces, and with a little attention, they might be made uniform and even ornamental.

Q. 7. Places considered unhealthy and any peculiarities observed in those places?—A. The Suburbs, nay, indeed the entire Native town, must be considered unhealthy, inefficient, or rather no drainage—tainted tanks and an eternal mass of animal and vegetable matter in a state of decomposition surrounding them.

Q. 8. Healthy situations and peculiarities belonging to them?—A. With such elements in perpetual operation for the destruction of animal life, in all parts of the Native Town and Suburbs I have never found amidst the wilderness, the green spot in which the philanthropist could repose, and exclaim "~~Hinc~~ Sanitas."

Q. 9. Note where masses of buildings or huts should be opened out, and where new streets or roads are wanted for salubrity?—A. Half measures will be totally unproductive of the end in view. An entire regeneration of the system, must be the plan. Huts should be separate, formed into large squares, or broad roads, the former containing a well constructed tank in the centre, and the latter invariably traversing from south to north. I recommend most earnestly to the attention of the Committee, the opening of a wide street from the new Mint to the Circular Road. This in my opinion would be a great and solid improvement, and would tend more than any other measure, to uproot prejudice, and the cleansing of the Native town. A Steam Engine of sufficient power on the banks of the river, an aqueduct, and half a dozen large tanks formed in the line of the road, to be filled by water from the river, when scarcity prevails, would reflect immortal honour on the individual, who succeeds in carrying this great Municipal improvement into effect.

Q. 10. State of the tanks in respect of salubrity?—A. As at present, most injurious to life, and even thus early in the season, nearly all putrid and dry.

Q. 11. State of the wells in this respect?—A. Answered in the preceding.

Q. 12. Markets, and how far kept in a salubrious state?—A. Ignorant—having been only once in a market, and that many years ago—but I recollect it was so dirty, as to prevent me eating animal food for several weeks thereafter.

Q. 13. Native burying grounds, and whether in a neglected and insalubrious state, and in what respect?—*A.* Crowded, neglected, and insalubrious from being neglected, as nothing but jungle prevails.

Q. 14. State of the public privies in this respect?—*A.* Never was in one; but as they are constructed at present, I am satisfied they are fruitful sources of disease, and destructive to the comfort of the residents in their vicinity.

Q. 15. Note down whatever presents itself in the state of the town and circumstances of the inhabitants as, in your opinion, affecting injuriously the general health or comforts of the population?—*A.* Replied to fully in the preceding. Tainted tanks, want of water, poisonous drains, and imperfect ventilation. Improve these, widen and water the roads, and Calcutta will be as healthy as any city in the world.

Q. 16. Mention the diseases most prevalent, and what periods of the year are considered by you the most unhealthy?—*A.* Fever, diarrhoea, dysentery and cholera; hooping cough, measles and small pox. The former prevail during the autumnal months, the latter during the cold season, which in my opinion is the most healthy during the year. The autumnal months the most unhealthy.

WILLIAM GRAHAM, M. D.

Calcutta,
February 28th, 1837. }

No. 8.

Dr. W. Graham,
to
Municipal Enquiry,
2d Sub-Committee,
28th Feb. 1837.

Sir J. P. Grant's House, Saturday, 29th April, 1837.

Mr. J. R. MARTIN, examined.

Q. 1. Are you aware of the effect of an abundant supply of water in preventing disease?—*A.* The most remarkable that I recollect hearing of is the case of Belfast, where I have read that an epidemic fever prevailed a few years ago, and that portion of the city the worst supplied with water, and where consequently sewerage and drainage were deficient, furnished 3-5ths of all the fever cases.

Q. 2. Do you know the comparative state of health of Philadelphia now and formerly?—*A.* I know historically, that epidemic yellow fever used to prevail to an exterminating degree there, which has given way to the recent measures of prevention, and Dr. Rush's account is the best I am acquainted with as to the public health of that city.

Q. 3. Have you perused the evidence of Muddoosoodun taken on the 27th February last?—*A.* I have.

No. 9.

Mr. J. R. Martin,
before
Municipal Enquiry,
2d Sub-Committee,
29th April, 1837.

No. 9.

Mr. J. R. Martin,
before
Municipal Enquiry,
2d Sub-Committee,
29th April, 1837.

Q. 4. Do you concur in his opinion, or with what variation?—**A.** As to the nature and extent of the diseases, I do. I believe he has, however, underrated the prevalence of fever and its sequelæ, spleen and diarrhœa, which carry off more Natives than any other diseases. The dyspeptic complaints of which he speaks I know to be very general, and so is a great variety of eruptive complaints;—they are caused by general poverty of diet, want of sufficient condiment with the rice, long fasts, misuse of the cold bath, and want of proper clothing. Rheumatism, as a consequence of venereal disease, and improper treatment, is extraordinarily prevalent. All the men who present themselves on that account at the Native Hospital have previously been repeatedly salivated in the bazar, and from the misuse of mercury and the cold bath, present themselves generally with swollen joints and nodes upon the bones. The abuse of arsenic by the native doctors, in the treatment of fever and other diseases is also a great injury to native health.

The women are generally liable to the diseases which affect the men, as far as these are occasioned by climate; but their habits of life being so much better than those of the men, enable them to escape with comparative impunity.

I have perused the evidence of Muddoosoodun on the 2d examination.

I have had many opportunities of personally knowing that what he says is true. I have never yet been able to enter the apartments of a lying-in woman, even in the houses of the wealthier Baboos, on account of the heat and suffocating smoke, until they had been thrown open and ventilated. I have reason also to know that, in the treatment of the Native Midwives, they are in the habit of hurrying the operations of nature, so as greatly to injure their unfortunate patients. The treatment altogether of lying-in women is pernicious, and my surprise is, that the mortality is not even greater; few European women could survive it. I am not so well acquainted with the effects of their management on the new born children, as the cases I have been called into were to save the lives of the mothers.

I concur entirely in the advantages of instructing Native Midwives as stated by Muddoosoodun.

Q. 5. Have you any further observations to make with regard to the salubrity of Calcutta?—**A.** I shall hand in my Report in a few days.

Q. 6. What do you think of the deficient supply of water for drinking and culinary purposes?—**A.** It is an enormous evil, and one that is very loudly complained of by themselves.

*Abstract from Mr. Martin's Notes on the Medical Topography
of Calcutta.*

No. 9.
Mr. J. R. Martin,
before
Municipal Enquiry,
2d Sub-committee,
29th April, 1837.

By the report presented by Mr. J. R. Martin, and printed by order of Government, on the Medical Topography of Calcutta, alluded to at page 96, it appears that the following are amongst the chief causes assigned by that Gentleman for the unhealthiness amongst the Native inhabitants of the Town and Suburbs, viz.

1st.—The over-crowded population ; the crowded and ill-ventilated state of the houses ; the great number of decayed habitations.

2d.—Their ill-construction, and being built on the ground instead of being raised off it, as habitations ought always to be in countries subject to inundation, like Bengal.

3d.—The close, narrow, and ill-ventilated state of the streets ; their want of water courses and pavements ; their dustiness and general want of cleanliness ; their want of proper direction, in reference to prevailing winds.

4th.—The imperfection of the drainage and sewerage : this is a great source of unhealthiness.

5th.—The deficiency of good tanks, and the general want of a supply of good water ; the number of decayed and half-dried tanks, affording unwholesome water, and yielding noxious exhalations.

6th.—Crowded, filthy, ill-ventilated, and unpaved state of the public markets.

7th.—Neglected and ill-arranged condition of the public batties.

8th.—Bad state of the native burying grounds, and their vicinity to the Town.

9th.—The very neglected state of all the surrounding Suburbs. The numbers of salines and marshes.

10th.—The construction of the canals, and the heaping of their banks, so as to prevent the drainage eastward, along the natural inclination of the soil.

11th.—The vicinity of Rice cultivation.

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Mr. J. R. Martin,
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2d Sub-Committee,
29th April, 1837.

12th.—The quantity of low jungle tree, obstructing ventilation, and the great extent of irregularity of ground, admitting of the lodgement of impure waters, &c., giving off unhealthy exhalations. These are chiefly to be found in the Suburbs.

13th.—Great immorality of the natives—Polygamy. *z*

14th.—“ The institution of caste is of itself an enormous injury to public health, because prejudicial to public happiness.”

15th.—The sedentary and indolent habits of the Natives—their irregular hours of rest ; their long fasts ; their improvidence and common practice of borrowing ; their exposure and irregularities at fairs and festivals of religion.

16th.—Their defective diet, clothing, bedding and fuel.

17th.—The knavery and ignorance of the Native practitioners in medicine and surgery.

18th.—The misuse of the cold bath under circumstances of impaired health, and especially during the cold season.

19th.—Neglect of vaccination.

20th.—The want of Hospitals.

21st.—Defective education and physical management of children.

Town Hall, Monday, the 15th May, 1837.

JAMES PRINSEP, Esq. *Evidence.*

Replies to the Queries that were put to LIEUT. W. ABERCROMBIE.

No. 10.

James Prinsep, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
10th May, 1837.

Q. 1. What is the relative height at different periods of the year, of the tide of the River Hooghly, opposite the Town of Calcutta, and of the Saltwater Lake, as compared with each other, and with the general level of the Town?—**A.** This is given in Captain Prinsep's Note on the Tides in the Gleanings, also in his Map of the Suburbs.

The average levels of the River and Lake during the dry season are nearly the same, the rise and fall only being then much greater in the former than the latter, say five feet greater both ways in mean tides. In the rains the River average level may be taken as four or five feet higher than the Lake, and for a short period the ebb does not descend to the Lake Level.

Q. 2. Have you examined into the accuracy of those Levels, and on what ground do you think them accurately taken?—**A.** The only point open to correction in the Tables alluded to above, is the amount of rise and fall in the Lake, which is underrated by Captain Prinsep, being taken from a Register in the Entallee Canal near Kulia Bridge. Considerable effect will also have been produced by bunding the Lake Channel, of which Captain Thomson will be best able to render an account.

Q. 3. What is the difference of level between the general average level of Calcutta and the level of the lowest part of Calcutta, and where is that lowest level found?—**A.** Major Schaleh's Books of Levels will furnish this information. The lowest part of Calcutta is stated in my brother's scale to be eight feet above the zero or mean Lake Level (alias the Level of the Sea) and five feet lower than the highest rise of the River Hooghly. It is always high enough above the Lake and Canal Level to insure drainage of rain water.

Q. 4. With reference to the object of carrying off the water, whether fallen from the clouds, or rising from springs, which in your opinion is the proper direction for the general system of drainage in Calcutta, towards an ultimate discharge of the water, the River Hooghly, or Saltwater Lake?—**A.** The natural slope of the country is obviously the proper one for superficial drainage, i. e. taking the Chitpoor Road or Clive Street as the highest ridge, the Town Eastward should be drained to the Lake and Westward to the River—but where underground Channels exist, some modification of this general principle must be understood, as then it is optional where to make the discharge, and it need only be regulated by convenience and the maximum height of the water level compared with that of the ground to be drained.

Q. 5. Would there be any advantage in taking a line from North to South, along the Chitpoor Road, and carrying open drains from it Westward to the

No 10.

James Prinsep, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
10th May, 1837.

Hooghly, and Eastward to the Canal?—*A.* I conceive this to be already done in some measure. I certainly would not advise the undoing of the existing system where it suffices for the object.

Q. 6. Would there not be a great accumulation of filth, which from the length of drainage from West to East, (receiving the cross Drains from North to South) would be very objectionable?—*A.* What is here understood by filth? All open drains will require to be cleansed and swept—except during the actual fall of rain, when they are effectually scoured.

Q. 7. You said at a former examination, that the water is now carried off, &c., are you still of the same opinion?—*A.* I agree with Lieutenant Abercrombie that the water is carried off very effectually from the general surface—there may be parts requiring amendment in the Native Town and Suburbs, for which the Engineer of the Conservancy Department will naturally provide a remedy in the ordinary course of his duties.

Q. 8. It is presumed you speak of the water, as drained off the general surface, is there any deposit of water in the drains, which is not carried off, and if so, owing to what causes?—*A.* Drains badly built will have pools here and there, when *quite empty*, but while the rain water is flowing off such irregularities are of little importance.

Q. 9. Do you think this cutting directed in a judicious and scientific manner?—*A.* This alludes I suppose to the kucha drains. I think the annual cutting away of the grass, &c., on the banks, and the plastering thereon of the silt from the bed of the drains is injudicious—It cuts away the binding material and substitutes friable stuff to be washed back again by the first hard shower.

Q. 10. Is there a great deposit of water in the drains?—*A.* Of stagnant water?—Our seasons are always in extremes—In the dry, the drains will be soon dried up by heat and evaporation—In the wet, there is of course a constant flow.

Q. 11. There are Sewers, one under Government House, running from East to West, and there is another; they have been thirty years formed, nearly the same as those proposed by Mr. Blechynden. Have you ever known or heard of their being filled up? they are straight tunnels?—*A.* On this subject Mr. McFarlan has given me information, but I presume it is before the Committee and need not be repeated. These tunnels seem to remain always clear—in fact they may be said to be only in use during the rains, when there is rush sufficient to scour off the slight deposit they may have gained during the dry season.

Q. 12. There is a tunnel running down Court House Street, crossing the corner of Tank-Square, and going zigzag; it has been dug twelve years; is there any considerable deposit in this, so as to obstruct the passage of water?—*A.* Whether zigzag or straight is of minor consequence—the length of channel, its area and slope, being the elements requisite for calculating effects.

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Q. 13. Do you think that sewers, something on the plan of those under existing management, in straight lines, more scientifically built, with the addition of being forced by water from a raised reservoir, similar to that which Captain Thomson's plan also requires, and also taking advantage of the rise and fall of the tide, the different levels of the Saltwater Lake and the River, would be much less expensive than Captain Thomson's plan, and would be as efficient for the purposes of cleansing and draining?—**A.** It would take a great many Steam Engines to provide water for a current sufficient to keep a single drain clear if used as a common sewer. The play of the tides I do not conceive would keep up a current sufficient in the dry months. During the rains the flow from the River would do so if admitted, but then it would not be wanted as the rain would do even more. But against common sewers I have very strong objections, which I will state in a separate note.

Q. 14. If a number of Tanks were dug in the lower parts of the Town, would not this be sufficient, with proper slopes to them, from the roads, to draw off in all common cases the surplus water, which the tunnels had not capacity to hold?—**A.** The Tanks do draw off much of the water from the roads. They however fill before the rains are half over, and drainage *from* them has to be provided in most cases. If the proposed tunnels (against which however I argue) would not hold the water, what can prevent its running off along the streets as it does in fact now everywhere during heavy rain.

Q. 15. The rains are calculated to extend over a period of about four months, can you form any opinion of the quantity of water that would be carried off by the small five feet tunnels, spoken of on Saturday, during the period of the rains?—**A.** This is a mere matter of calculation which I presume has been answered. The registers published monthly in the Journal of the Asiatic Society will furnish the data, as to the fall of rain.

Q. 16. With reference to the fall of four inches, which may be expected to occur at one time, what proportion of that fall do you think might be received by the six Tanks you have spoken of?—**A.** There has been a fall of *thirteen* inches in twenty-four hours. With this the Tanks would be overflowing in a few hours—on such occasions temporary inconvenience is unavoidable, but few Towns have it so speedily remedied as Calcutta.

Q. 17. There is a fall in many parts towards the Saltwater Lake and Canal, would there not be a considerable annual fall of the rain carried along the sides of the roads by the water slopes, without considerable inconvenience?—**A.** I cannot conceive *any* inconvenience in allowing *all* of the rain water to flow off on the road sides as it does now.

Q. 18. Do you mean to say in all places, there are these checks?—**A.** I do not know to what this question alludes.

Q. 19. Is not the greater part of the fall of water carried into the Mahratta Ditch at present?—**A.** The main drains cross, what is called the Mahratta Ditch,

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which has now become as it were absorbed, its duty being better performed by the Canal.

Q. 20. In case of a sudden fall of rain, might not a part be received by the Mahratta Ditch, till it might run off?—A. Why think of stopping it in any such reservoir when it finds its way into the Canal at once? I fancy there must be some scheme of keeping the Canal water at a low level, by cutting off these supplies, which I have not before me, otherwise these questions are not readily intelligible—but it must be borne in mind that the Canal level will rise as much whether the flow into it take place through underground tunnels or from the superficial drains, or whether a reservoir of deposit intervene, when once the latter may become full.

Q. 21. Would not the formation of Tanks such as you have mentioned, or even of smaller dimensions be, in your opinion, of great advantage to the salubrity of the Town?—A. The Tanks would be a convenience, and would not injure the salubrity if kept clean. I doubt much their adding to it—the Tanks in the interior of the Town are generally made receptacles of rubbish and filth—or are covered with rank vegetation.

Q. 22. Is there any want of water in any parts of the Town, for domestic purposes, which would be supplied by such Tanks?—A. The Hindus use River water for drinking and domestic purposes. Large clean Tanks would always be preferable to the dirty ones now scattered over the Town.

Q. 23. Would there not be considerable advantage to the salubrity of the Town, from applying the quantity of earth supplied by the excavation of Tanks, such as you have mentioned, to the filling up hollows and swampy places?—A. Valeat quantum. In consequence of the late fires people are building mud huts, the consequence is that a quantity of holes are left which alone would provide for all the mud from Tanks—but who can pay for the cartage?

Q. 24. Are there not a sufficient number of hollows and swampy places, which ought to be filled up, to receive all the earth, which would be dug up, by such excavations?—A. There are plenty of Tanks to be filled up, for there are as many advocates for the filling up and gain of ground therefrom, as for the digging; and in numerous cases the filling up would most benefit the salubrity. Where there is a Tank it should be a maxim to keep it clean, and full of water.

Q. 25. Could you furnish the Committee with estimates of the expenses of carrying into effect the different plans suggested, or referred to, in the course of your examination?—A. Such estimates should include iron railings, pukka ghats, &c., without which the integrity of the tanks could not be preserved intact.

Q. 26. Have you any observations which you can submit to the Committee, with regard to the present state of the cleansing the streets of Calcutta?—A. This can only be answered by one in the department. I should be inclined to recommend modifications in the system of Scavengery. I have seen whole regiments of

carts and men mustered at one extremity of Calcutta, to be deputed thence to a distance for their day's operations—thus losing a vast deal of time. The much vaunted Dhangas also are not very active in their operations.

No. 10.
James Prinsep, Esqr.
to
Municipal Enquiry,
2d Sub-Committee,
10th May, 1837.

Q. 27. Are there no existing means of preventing the throwing of dirt and rubbish into the streets, in the manner you have mentioned?—*A.* If not thrown into the streets, where is rubbish and dirt to be put, by those who have no hands to spare, nor money to convey it—and who pay, too, their quota for the establishment to take it away? The object of the Conservancy establishment is to remove such accumulations in due course.

Q. 28. When these persons are so ordered to abate nuisances are they not guaranteed against the consequences, if the order should happen to be illegal?—The remaining questions affect merely the control and the rules of the Conservancy Department, with which I am not acquainted.

J. PRINSEP.

Calcutta, 10th May, 1837.

NOTE.

Having briefly answered the foregoing series of questions, I now proceed to offer a few observations, although I must premise that I have given but little attention to the subject, and am therefore by no means prepared to criticise the plans offered by others.

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James Prinsep, Esqr.
to
Municipal Enquiry,
2d Sub Committee,
14th May, 1837.

The general slope of the Country from the bank of the River to the marshes and Soondurbum Creeks on the East—(a natural effect produced by the gradual silting from the turbid River water of the freshes in a long series of ages,) is the best possible condition for an efficient superficial drainage: and I do not see that with due precautions in particular localities, there can be any difficulty on this head or that there need be any complaints of water lying and lodging any where, even after heavy falls of rain. The only cause likely to produce a check to the drainage in the Native part of the Town, is the contraction of the passages through which the water should flow Eastward—and it would be a real improvement of the first magnitude, to open one or two wide streets East and West, similar to the North and South cuts made by the Lottery Committee. These openings would also have a beneficial effect in arresting the progress of fires which are generally urged North or South by a high wind, and have nothing to break their course. They would also be exceedingly convenient to the traffic to and fro from the Canal to the River. Muchwa Bazar, the chief thoroughfare, at present is barely passable for two carts, and its narrow drains, continually subject to be choked from rubbish falling in, are wholly inadequate to carry off the ordinary torrent of water, while the limited space renders it impossible to improve their condition.

The excavation of the Circular Canal has added very materially to the rapidity with which the surface or rain water of the Town can be drawn off; because it

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has brought the low level of the Lake about two miles nearer. In laying down the tunnel drains through the Canal banks, I purposely placed them so low, as to gain the benefit of this additional slope for the Town drainage, *should it be found advisable* :—but the current was so much augmented thereby, that the washing of soorkhee and rubbish caused an immense deposit in the Canal, and I thought it prudent to block up the conduits to the former level, and thus retain a portion of the deposit in the street drains whence it could be more conveniently taken up. I tried this experimentally in Bythukkhanah drain, and I believe my successor, Captain Thomson, has followed it up in most of the other drains, but I cannot speak of the precise results on the amount of deposit. Judging from the deposit-basin constructed for the Dhurumtolla drain at the head of the Entallee Canal, I should not think there had been a material diminution of deposit: but of this Captain Thomson can of course best inform the Committee. It is obviously desirable for the drainage of the lowest parts of the Town, that the bed of the drains (or of particular ones) should be kept as low as possible, but to this there is a limit, inasmuch as if too low there will occasionally be a reflux from the Canal. This is however transient, and similar to the back current from Tolly's Nullah into the Chowringhee drains, which causes no particular inconvenience. It is in all cases the top difference of level which determines the flow; and a *subaqueous* drain, or one entering the River or Canal entirely below its surface, will flow just as freely as another, if the propelling head of water be alike in both cases.

If asked whether open or closed drains are to be preferred in a Town like Calcutta, I should reply that there are situations proper for each, and that the skilful Engineer will never think of employing one to the exclusion of the other. Where the streets are broad and open—the dish-drain, if I may so term it, is obviously the best, being easiest to clean—soonest dried by the sun—less dangerous to cattle, carriages and passengers—more convenient for shops—but for the latter it would always be desirable to leave a flat bricked pooshta of moderate width *beyond the drain*, on which people could stand while purchasing from shops; instead of, as generally practised in Calcutta, having either to stand in the drain, or the shop-keeper being forced to project a frail wooden stall over the drain to be accessible to the customer beyond the drain. The habits of the Natives are averse to the use of the foot pavement, but if in our new wide streets it were introduced, it would in due course of time be properly appreciated and used.

When the streets are so narrow as not to admit of the dished drain, it becomes necessary to adopt the parallelogram, because it admits of the flow of a much larger body of water with a given width; and the ratio of breadth to depth should thus bear reference to the dimensions of the street. It has another advantage for such situations, namely, that the bridges communicating from the streets to the houses, need not take aught from the area of the drain.

Again in narrow streets, bounded by shops, it becomes a desideratum to avoid the desagremens of a gutter altogether; and thus we reach the point where convenience points out the use of a covered drain. But for superficial drains

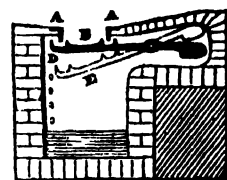
of this nature, a cover of planks fitting into a row of coping bricks made on purpose for the object, is all that is necessary. It is cheap, durable, light for removal when the drain has to be swept, and not so easily broken by the shocks of a carriage wheel or horse's foot, as a flag-stone covering.

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Again, connected with shops and native dwellings, there will always be drippings and washings which the covered drain will hold and hide, and allow to be removed by hand from time to time as it solidifies, when there is not sufficient supply of liquid flowing to carry it away to the larger drains or other receptacles.

It may be objected that these drains would emit a more offensive smell than the open drain, which dries so rapidly in the hot weather of an Indian climate. This can partially be remedied by fitting the cover well—by frequent sweeping—by the use of quick lime—or more effectually than all by the passage of a current of water. But the latter expedient if generally applied would be very expensive, and incommensurate with the trifling grievance (trifling to the poorer classes who alone feel it, and who have to pay for its removal) now complained of (if indeed it be complained of?) I understand that the leakage of the aqueduct considerably sweetens the Dhurumtolla drain,—which from its depth and uncovered state may at times be very offensive; and an occasional discharge of the aqueduct water into it might probably much improve its condition. Where however the bed of a drain is dry I do not think the introduction of water into it (unless always flowing) would do more than arouse its latent offensiveness.

Objections and complaints have been heard against the offensive odour from the tunnel drains which pass to the river, one along Esplanade Row, another through Tank Square. The nuisance here is confined to the dry weather, when the flow is next to nothing. The modes of obviating it are simple:—Pass a scouring current now and then, at low water, from the aqueduct into it—close all the sink holes, during the dry weather so that no bad air shall escape upward—or fit them with *water valves* fed from the aqueduct, which would open of themselves when a flow of rain came—many forms may be imagined for this valve; I sketch one in the margin.



The iron rim of the square or circular sink-frame, A, dips into a groove in the shutter B, which should be kept replenished with water from the leakings of the aqueduct: the surplus dropping over into the drain (as seen at D).—When a shower of rain comes, it fills the central chamber B, overcomes the counterpoise—the shutter falls, to the dotted line E and the rain enters the drain freely—after which the shutter closes of itself.

Were stink-traps on this principle adopted, and these tunnel drains elsewhere carefully arched and covered, no possible offence could be perceived—nor would it be necessary ever to send men into them at the peril of their lives; for I understand from the Chief Magistrate that they never fill up, being completely scoured every rains. At any rate a trial of the efficacy of the plan could be made at a very trifling expense, as the valves could be cast in iron at any Calcutta foundry.

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The question whether it would be advisable to construct tunnels similar to the two just mentioned in other parts of the Town, is rather of a complex nature. Were there other wide streets and open areas near the river to the northward, such a system would be obviously advantageous ; but in the first place, the space is closely crowded with buildings and narrow streets—in the second place the river leaves a large deposit along the Strand road, which would choke up the mouth of a deep drain, and one opening on the road side and not continued to low water mark would only add a fresh nuisance to the existing evils of the muddy bank. Still I am far from saying that drains may not be judiciously planned for many sites between the Chitpore Road and the River. This is a practical point upon which I am unable to speak without examining the premises. The fact is, the Native part of the town has received comparatively little attention. Kucha drains exist still in hundreds of places where neat pukka ones should be constructed, and provision made for cleansing them—but why should we be surprized at this backwardness of improvement, when almost throughout the Suburbs the poor inhabitants have no way of passing over the deep main drains of the town, but by a single toddy-tree log, over which may be seen tottering the old, the infirm, and the infant, in constant peril of severe injury.—I speak not of mere access to dwelling houses, which it may be argued should be made at the expense of the individual, but of *main streets* and *thoroughfares* even, which are in this country left exclusively to the care and superintendence of the Officers of Government.

It will be remarked that in the preceding observations I have made no allusion to drains as applicable to the purposes of the common sewer of European towns. Such an application does not exist here, nor can I by any means advocate the introduction of the system prevailing in London, and for aught I know in London alone of all the capitals of Europe. The primary advantage there enjoyed of a constant flow of water—an underground river—is wholly wanting here, nor could it be artificially produced, but at an inordinate expense by steam pumps. The space occupied by dwellings is ten or twenty times as great as in an European town ; and the value of property in the native town would never meet any such outlay as would be required for the mains, much less for the branch conduits from each dwelling. But even supposing the underground work to be executed at Government expense, where would be the supply of water to convey the night soil from the private dwellings to the common sewer ? There must be metal pipes, a head of water to force the liquid to the tops of houses—and in short all the paraphernalia of the water-closet system, in a town where the price of one such concern would absorb the yearly income of the majority of its inhabitants ! But every body knows that the water-closet system is not perfect—that in fact every house has its cess-pool and its stink-traps ; and that the night soil is forced to be removed (as its name denotes) by hand in the night, as soon as the receptacle is filled—being purposely so framed that only what is liquid shall pass off into the main drains.

I will venture to contend that the Paris system—that our system,—is far preferable on the score of cleanliness ; and where labour is so cheap, on that of expense likewise. I speak of the system in the houses of the upper classes.

Not a servant would be reduced were the water-closet system adopted, but on the contrary a new set would have to be called in occasionally—and the outlay on repairs of pipes and apparatus would be much heavier than in England; not to mention their heavy cost at first: and the immense expenditure on the public part of the system, the street conduits, &c.

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I have had some experience of the unmanageability of common sewers of an imperfect construction, during my residence at Benares. This town possesses several of the essentials for the success of a sewerage system—situated on a high ridge, 80 feet above low water of the river (and 30 or 40 even in the rains,) the houses are thickly jammed together; the inhabitants of the pukka town are wealthy—and they use a great quantity of water in their dwellings for bathing, &c. Every street may be said to be a covered sewer, and there are mains at convenient distances conducting to the open drains and low tulaos on the back of the town, which are now put in direct communication with the river by a tunnel pierced through the high ridge at the lower end of the town, so as to avoid throwing any of the discharge into the river in front of the bathing ghats.

Notwithstanding all these advantages, the drains may be regarded as a perfect nuisance. At intervals, of about three years, every drain has to be opened from one end to the other, and the soil to be removed by hand. On these occasions the streets are entirely closed, for the slabs of stone reach the whole width of the passage—the inhabitants can barely thread their way from chabootra to chabootra, and I have often been assured that their eyes watered from the excessive stench—the soil being in a semi-liquid state, and being necessarily thrown up on any surface that presents itself, to solidify by evaporation of the liquid and volatile portion, before it can be carried away in baskets on labourers' heads!

There are some drains leading in a similar way to the river among the ghats, and certainly the inconvenience they caused, often made me doubt whether they ought not to be prohibited, nor do I think that the expense of daily removal from house to house, would be in the long run more expensive than the triennial cleansing and repair of the streets drains, for which each Muhulla is now regularly assessed.

The above description applies only to the densely packed pukka Town—the Suburbs, which comprehend the larger portion, are without drains (or common sewers) the inhabitants universally resorting to fields and the beds and borders of tanks, which are only kept clean by herds of swine. This system though disgusting to an European, is so congenial to the habits of the people, that when once I attempted a reform by the introduction of tatties, with establishments to cleanse them, and charging only *one couroy* for admittance (which was of course not near enough to pay the expense) the whole Town was in an uproar. I convened them *en masse* to argue the point, but after expatiating upon the benefits of cleanliness for an hour or two—they all protested they cared not for the smell, nor the exposure, nor even the defilement of their sacred places (for the tanks are all holy places of pilgrimages)—I was forced to concede, and was then greeted with vociferous acclamations! Calcutta is happily one step more civilized in its institutions, and those who declaim against what they see here, should visit the Town

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in the interior (say Allahabad) to form a fair comparison, and to judge of the difficulty of extracting from abject poverty the wherewithal to provide an expensive luxury. Fields are there purchased by Government for aïsançe, as tatties are erected here, but so niggardly were the contributions for the conservancy of the Town, even when a fund was furnished from the Town duties, that the walls round the fields were seldom or never repaired—and now that all pecuniary aid is withheld, the case must be infinitely worse than before.

But I am making a terrible digression, and must return to Calcutta. I have opposed the introduction of common sewers. I need not therefore stop to argue the theoretical question of the tunnel system proposed by Captain Thomson or Mr. Blechynden. For superficial drainage they are by no means required—for sewers they would merely be the skeleton of an extensive system, the enormous cost of which would alone in my opinion, put it out of the question; independently of the objections I have adduced against the connecting conduits in a country, where no occasional showers interrupt the drought for months. With deep drains, always under water mark (which they must be, to enjoy a current, from the river to the canal or *vice versa*, there would be immense difficulty of cleaning—and as there would be intervals, for several hours during each tide, of perfect quiescence, the sootklee and rubbish of all sorts washed into such drains, would I think have time to consolidate, so as not readily to be taken up when the current returned: and moreover any impediment in the line (no notice of which could be given as all is concealed from view) would cause a deposit to the same height all along, thus by degrees filling the tunnels and rendering them useless—but I must apologize for offering a hasty opinion upon a project I have not examined in detail.

What plan of amelioration then can I recommend to the Committee, in regard to this department of cleanliness?—I would interdict the discharge of any privies on to the road sides. Where there is no fit place to the back of the premises, accessible to the nightmen, I would adopt the mode followed in the European dwellings or allow parties to have cesspools on their own premises. The flow of kitchen washings, &c. along the drains is not so objectionable, if there be an establishment to sweep and remove obstructions.

The tatty system should be under strict control, and Mr. McFarlan's floating tatties may be made a very efficient engine of cleanliness, if adopted in good earnest, that is, with properly constructed boats, instead of make-shift dingees and mats.

Let a given Muhulla be taken and attended to—made a model of cleanliness—that the best means, and the expense may be ascertained:—let the people themselves be made parties to all plans—they will often give very good suggestions themselves. Meantime if it be desirable to know the efficacy of flowing water in removing filth or sweetening drains, let the experiment be tried on a sufficient scale with the water from the aqueduct turned into the Cossitollah—the Dhurumtulla—the Government House—or Esplanade, Drain. Practical effects thus witnessed will be worth more than the theoretical suggestions even of the most experienced.

14th May, 1837.

J. PRINSEP.

Town Hall, Friday, 1st September, 1837.

D. McFARLAN, Esq.'s Evidence.

No. 11.

D. McFarlan, Esq.,
to
Municipal Enquiry,
2d Sub-Committee,
31st August, 1837.

To the President and Members of the Municipal Committee.

GENTLEMEN,

I have the honor to acknowledge the receipt (on the 10th) of your letter of the 8th Instant, and to reply to it as follows :

2. The terms of your requisition are very general. My opinion is desired on all matters relative to the Conservancy Department in Calcutta, which opinion may appear to me to be likely to be useful to the Committee in their enquiry. To so very general a question it is almost impossible for me to return any answer which may not be open, for aught I can tell, to the blame of occupying your time with a discussion on points settled or on points not requiring to be discussed. I could not tell whether my attention was intended to be called to some proposed system of drainage or sewerage or to defects in the present system, to the question of lighting or watering, or to the means of raising funds for the due execution of the present or better plans.

3. The kindness of your Secretary has enabled me to have access to your Proceedings, and I found in the letter which originated your Committee the following words used, that " there should be founded some plan of judicious and " adequate local taxation and independent local management, in the direction as in " the burdens of which, all who might be most interested should take their share."

4. This naturally led me into the consideration of a subject which, as far as I can see, has not been hinted at in the proceedings before your Committee; viz. the extent to which the Government would be expected to contribute to the funds available for the good government of the Town, and the sources from which the deficiency already existing, even for conducting matters on their present scale, could be supplied.

5. Upon the best consideration I can give the subject during the hurried moments I can snatch from current business, I think I had better refrain from entering into these questions, since, if the Committee desired an answer to them, the requisition would have been put more pointedly.

6. I proceed at once then to the details of Conservancy matters which have occupied much of the attention of the Committee in one branch, although I have already answered some of them in another.*

7. I observe some stress laid upon the subject of petty encroachments in the Town. I am not aware of the existence of any which might not summarily be

* See my examination of the 27th Decr. 1836.

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removed by six weeks vigorous administration of the laws we have at present. The Judicial branch of the Conservancy has long been on an unsatisfactory footing. A Magistrate for some years attended twice a week for an hour or two to decide the petty cases that were brought before him. Again an unpaid Magistrate attended for some years, and latterly the principal weight of the Judicial business has fallen upon Mr. Blaquiére as officiating for Raja Radha Kant Deb. All that is required is that Government should declare (as recommended in my report of 1834) that the Conservancy Judicial Department be abolished, together with the Conservancy Sircars, and that the Overseers, acting under the Superintendent, should bring forward to the Division Magistrates all cases requiring notice.

8. Some additional power we certainly require : that of dealing with the Public Tattees situated on private ground, and pulling down ruinous houses, but the jealousy of the Law of England against the infringement of private property will probably there interfere.

9. Stress is also laid upon another grievance ; viz. that people put out their stable dung and kitchen sweepings on the public road instead of waiting till the public carts come round and depositing it in them. Really if this be a great offence we are all guilty of it from the highest to the lowest. Whether a Lawyer, might not say that he had a right under the law to put the sweepings there for four hours I can hardly tell ; but the evil, if great, could be cured by every man refraining from the practice or accusing his neighbour of it.

10. An evil of far greater magnitude than this is, that in the heart of Calcutta, where houses have no compounds, carriages are put out on the street to be washed. Shall we prohibit this, though the Bye Law of 1814 appears to sanction it.

11. I come now to the important question which has occupied so much of the time of your Committee, viz. what, if we had abundant funds, would be the best mode of drainage and sewerage.

12. On this point I beg to refer to my printed letter of 15th March 1834, page 16—"The ends for which the drains have hitherto been constructed is pretty well answered." I remain of the same opinion. By a slight depression of the sills of the bridges at the Circular* Road the flow of the drains would be more rapid. By this and other slight improvements, the overflowing of a few streets for a few hours in the year would not occur. Some other improvements, such as that suggested by Mr. J. Prinsep for Court House street and other streets similarly situated, would be required, but the whole expense would be a trifle compared with the outlay that would be involved in the construction of great sewers.

* On the subject of the silt poured into the Canals by the Calcutta drains I add an extract from a Report by the Military Board to Government, dated the 29th August, 1837.

13. If it were determined to go to the expense of making all the present *oucha* (earth) drains of masonry, I should say that a necessary preliminary to that expense would be to straighten them. This could not be done except at so great expense as would make it worth while to straighten the streets, in other words, to open up new streets having *pukka* tunnels running through them.

14. The progress of all improvement of this sort is slow, and till we have funds or a prospect of them for the purpose, it seems quite in vain to argue about how one would have them.

15. The idea of constructing tunnels to be washed out by jets of water artificially raised, can only be proposed to be realized when Calcutta becomes something like Bristol or some other 3d rate town of England. £20,000 is the annual out-turn of a tax of 5 per cent. on rental in Calcutta. I suppose an ordinary *parish* in London would yield as much.

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16. A vast deal of pains has been bestowed in considering whether tunnels should be constructed to run across the Town or round the Town, but what is to be the use of them: not drainage, for that is answered. Will a large tunnel on the Circular Road sweeten the surface drain at my door, or any other man's; or the foul smell at the western end of the Durrumtolla?

17. Mr. Prinsep's remarks about the use of tunnels as used in European towns are most just. The habits of the country require, if possible, that houses should be distinct, having access to the atmosphere on the four sides. This involves a compound, and a compound renders a tunnel in the street in a great measure useless.

18. I am still of the opinion expressed in my printed paper of 15th March, 1834, page 16. Cess pools for kitchen washings are the plain and manifest means of curing much of the annoyance that is experienced. I have had six years experience of the plan, and invite the attention of every Member of the Committee and of every considerate person to it. The stated objection that tanks would be spoiled, is answered in the above case also. A well of drinking water is situated within a few feet of the cess-pool and it has never been found to be in the slightest degree affected. I can send if desired a correspondence by which the Jackson's Ghaut nuisance was proposed to be greatly amended—but which was rendered inoperative.

19. Some of the Committee's time has been needlessly occupied with a supposed tunnel under the Government House. There is no such thing. "Another 30 years formed," alludes to something I have no knowledge of.

Question 11 to Mr. Prinsep.

20. There is no zig-zag tunnel in Court House Street. The sewer turns due West at Tank-Square and enters the River at Bankshall. In the cold season, when the air in it is warmer than in the atmosphere, it sends up through its openings very foul smells. I have caused the openings to be then closed. Stink traps easily manageable, not expensive and durable, are what we desire. Mr. Prinsep proposes a plan which will be tried.

Question 12.

21. *In the answers by Mr. Prinsep to all these I entirely agree. In regard to Answer 26, Lieutenant Abercrombie's plan would mend this, and has been recommended to Government. The effect of giving a flow of water from the aqueducts into the main drain of Chowringhee Road and Durrumtolla was partially tried on the Chowringhee Road, a little north of Monohar Doss' Tank. The quantity of water we could spare was inadequate, and the effect scarcely perceptible. The drain on the south side of the Durrumtolla is of the tunnel sort, badly constructed, having pools in its bed, and a fall of two feet thrown away at the eastern end.

Questions put to Mr. Prinsep.

* Question 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23.

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22. I do not think further remarks are called for from me. What I have penned have cost me every moment of leisure I could command. If I have left any thing unanswered which the Committee thinks requires an answer, I shall be most happy to give it. I desire however to be distinctly understood as not acquiescing in every thing stated in these volumes, merely because I have not noticed it in this reply.

I have the honor to be,

Gentlemen,

Your most obedient Servant,

D. MCFARLAN, *Chief Magistrate.*

CALCUTTA, POLICE OFFICE, }
31ST AUGUST, 1837. }

*Extract from a Report by the Military Board to Government,
dated the 29th August, 1837.*

Para. 9.—On the exact degree of effect the current possesses in washing out the silt from the Canal into the Lake, we do not feel ourselves in possession of data, sufficiently clear and conclusive, to be able to speak with confidence—Captain Thomson estimates it at 150,000 cubic feet in 1835-36, but of the benefit that arises from the current in more equally distributing the deposit over the whole bottom of the Canal, there can be no question; indeed, it is worthy of consideration, whether any considerable deposit could permanently co-exist with such a current.

Para. 12.—These facts, as far as they tend to shew the extent of injury these Canals are likely to sustain from the deposit of silt, are, we consider, satisfactory; the original depth to which the Circular Canal was excavated was 7 feet, but little expense has been incurred, or labour bestowed in dredging this Canal during the last three years, and since September last, the dredging has altogether ceased, still the shallowest part of the Canal is 5 feet 11 inches in depth and we proceed to shew that, in one portion of the line, the depth has considerably increased.

Para. 15.—The facts above detailed, afford, we think, sufficient grounds for believing that, not only have exaggerated apprehensions been entertained in some quarters regarding the degree of deposit which was likely to take place in these Canals from the Calcutta Drains flowing into them, but that the scouring effect likely to be produced from passing a current through the Canal has been greatly under-valued.

True Extract,

E. SANDERS,

Secretary Military Board.

Town Hall, Saturday, 2d September, 1837.

CAPTAIN W. N. FORBES's *Evidence.*

Replies to the Queries furnished him.

No. 12.

Capt. W. N. Forbes,
to
Municipal Enquiry,
2d Sub-Committee,
31st August, 1837.

Q. 1. Are the present drains kept open, or generally neglected and suffered to get choaked up?—**A.** The Drains of Calcutta—having originally been formed without reference to accurate observations of the levels—or to regularity and unity of plan; there would now be considerable difficulty in rendering them subservient to systematic improvement, I am however of opinion that the localities of Calcutta, are such as would admit of *its* being effectually drained, scoured and cleansed, but that these objects could not be attained save by the construction of works which (with reference to the small value of the property in houses scattered over the large surface of ground to be drained) would be proportionably far more expensive than the works similar in principle by which these objects have been accomplished in the principal cities of more civilized countries.

In occasional instances, the original defects of the Calcutta drains, combined with accidental causes in leading to their being overflowed in the rainy season, and rendered offensive in the hot months, yet, with regard to the appliances now at the disposal of the Conservancy Department, I by no means consider them generally neglected.

Several of the principal sewers being unlined with masonry, are merely ditches, which from the softness and looseness of their mud sides and bottoms, are constantly liable to being broken down, and formed into pits, and at other spots partially filled up by the action of currents of rain water, moving with far less velocity than would be requisite to afford them a chance of being effectually scoured out.

Such drains cost little in first construction, but apparently much in the repairs constantly and systematically afforded.

Q. 2. Are the present drains pretty free from bad smells, or are they generally in an offensive state. If so from what causes?—**A.** Receiving the refuse of cook-rooms and part of the filth of compounds they are not by any means free from smells, but under the influence of a similar climate it is probable the kennels of many portions of the chief towns of Britain would be found equally unsavory. In these towns shallow surface kennels, carrying off the rain water, and with it the mud and some of the filth of the streets, deliver their less gross contents—through iron gratings—to deep under ground sewers, which are constantly swept along by a stream of waste water derived from the supply originally provided for drinking and household purposes. In *Calcutta*, where no attempt has been made to supply each house with water, there is of course no such waste portion to be applied to

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the scouring out of the single set of drains, which in it are made to answer both as kennels, or surface water drains, and as common sewers. Two causes, operating at different seasons of the year, tend chiefly to prevent their effectually accomplishing these purposes; the FIRST, the fall of an extraordinary quantity of rain water, which carrying the pulverized materials of the roads into the drains partially dams them up, and thereby makes them cast out a portion of their offensive contents on the neighbouring streets or areas; the SECOND, the absence—for a considerable portion of the year, (more particularly in the cold and hot seasons) of a sufficient quantity of rain water, or of *water artificially raised*, to carry off the semifluid filth diurnally received from cook-rooms, compounds, &c.

It appears that, although not in force, there is now in existence a Police Byelaw prohibiting the discharge of cook-room scourings into the public drains. Were however the attempt to enforce it made, the reply of a proprietor of a house who had been ordered to stop up the communication between its cook-room and the public drain would probably be, that he would be willing to do so if the means of more satisfactorily disposing of the impure fluids in question could be pointed out to him, and advised in consequence to dig a well adapted for a cess-pool or for receiving until absorbed or evaporated such contents, *he* (in the present state of Medical opinion regarding such wells) might answer that his doing so would practically have the effect of reducing the value of his property, as two-thirds of the parties otherwise likely to become his tenants would then elsewhere seek for habitations. In Chouringhee, and in the parts of Calcutta occupied by the wealthiest inhabitants, or generally where the houses are much scattered, this nuisance might in some degree be abated by the employment of fluid tight carts, similar to those used in removing the puddle slush and sweepings of the streets of London, but as these machines could not be kept covered while receiving their loads, or while they were in progress through the city, it is apparent that from their presence each inhabitant would, during some portion of the day be exposed to the accumulated stench of many *cook-rooms*, in place of, as at present for the whole of the day, to the less concentrated effluvia of *one*. Regarding this consideration, and the fact that unanimity could not be expected on the question of whether a *great stench* for a short period, or a *small one* for a longer time is to be preferred, it cannot but be feared that the extension of the present plan of removing stable litter, carrion, &c., so as to make it include fluid deposits, would be found by its doubtful, and at best *partial* efficacy, disproportioned to its certain expense.

Q. 3. Whose duty is it to keep the drains in order and how is that duty usually performed?—A. This duty is performed by Lieutenant Abercrombie of Engineers, and the Conservancy Department, under the immediate direction of the Chief Magistrate, who, as well as Lieutenant Abercrombie, appear to be exceedingly anxious to apply the *funds* at his disposal in the most judicious manner, as also to obtain *more* to be applied to improvements steadily contemplated, but which, apart from such additional cash supplies, are assuredly impracticable.

The total annual cost of cleansing ^{the} town as it is now cleansed (of course merely including the establishments entertained expressly for the purpose) is about 73,000 rupees.

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Q. 4. Is the quarter in which you reside, or where you carry on business, subject to be flooded, if so, in what spots does the water lodge, and for what length of time, and are such spots offensive, either in themselves or from other, and what causes?—**A.** I reside in Middleton Row, Chouringhee, near the (old) Gool Talao—a locality comparatively well drained and not subject to being overflowed, although once in the course of last year and once in this year, the adjacent part of *Park-street* (where the drain was under repair) remained after a heavy fall of rain for a few hours flooded to the depth of twelve inches.

In these instances I did not observe that the inundated part of the road, or adjacent drains were offensive, but had it been the first heavy fall of rain of the season it is probable they would have been found so, as, under similar circumstances, they certainly sometimes are, in various native parts of the town.

Q. 5. What tanks have you, and are they kept clean and their sides, and banks kept in order?—**A.** The old Gool Talao, which contained but a small body of water, and had, partly in consequence become a nuisance, having been filled up, there are now no tanks in this vicinity.

The dirty, weedy, pits and puddles abounding in several localities being assuredly injurious to health, whilst large, deep and well kept tanks are indispensable, some for the supply of drinking water, and others for bathing, washing and other domestic purposes—I conceive that the salubrity of the town might be materially increased by converting a number of the first described filthy pools into a few extensive and well formed tanks.

I also am of opinion that part of these last, viz. those reserved for washermen, bathers, &c. might be so constructed as (filled at high water of the river or in the dry months by Engine power) to answer for reservoirs capable of being employed in making an effectual scour through part of the present drains, and through others better planned and adjusted respecting levels, into one of the channels of the Salt-water Lake—situated to the southward of the Circular Canal.

Q. 6. Are there any pools, or holes, which are apparently sources of disease from being the receptacles of filth, &c. if so state their locality?—**A.** Wherever native houses or huts are to be found, pools and holes of an offensive (if not of a pestilential description) are to be met with.

But when it is borne in mind that the first step taken by a native who is about to erect a mud house, or even a mat hut, is to dig such a hole to supply the earth which forms its raised foundation, it must be apparent that peremptorily putting a stop to this practice would in some degree have the effect of depopulating Calcutta. It may however be observed that could funds be obtained for establishing a good system of drains the earth excavated from them, in localities likely to be occupied by huts, might be so deposited as to form part of the mounds or hut foundations required—and it further may be noticed that regarding the cheap rate at which the natives (from necessity) now build, and furnish their habitations, they could not *unaided*, be expected to be able to bring the earth employed for this purpose from

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any considerable distance, as for instance from the large tanks above proposed to be formed, whilst in course of excavation. It moreover is certain that from those parts of the town chiefly composed of the class of society living in huts, no important contributions could be obtained, either for architectural, or drainage, improvements.

Were a new native town to be laid out, it had probably best be formed of a regular system of large tanks, with the native habitations arranged along the outer slope of a broad embankment constructed of the earth raised from the interior areas then, *in part*, constituting clear and deep reservoirs of drinking water.

By the sides of the roads interposed between these tanks (and which roads might also be a little raised above the average natural level of the ground) small drains of masonry, for carrying the water required in watering the roads, &c., could be formed on one of the side portions of the masonry of larger drains, adapted for receiving (through iron gratings) and carrying off the rain water, as also water detained at high water of the river, or in the dry season artificially raised into tanks of the description previously adverted to, this partly for the purpose of making a scour through *one (or more)* deep and central main drains to the southern, and lowest Salt-water Lake.

It may be urged that by the adoption of such a plan the entire portion of the ground occupied by houses, roads, and areas, in such low parts of the town would have to be artificially raised, and in fact that in these, nothing would be left low or made low, but the bottoms of the tanks, to which it is replied, even so. In reforming the native, or lowest parts of the town I would proceed (only on a large scale and with strict regard to uniformity of plan) on the simple principle almost instinctively acted on by the native in raising his hut. Building it on low land he, as above noticed, commences by sinking a pit, sufficiently large to furnish the earth required for lifting its floor, and perhaps an adjacent piece of garden ground, two or three feet above the long continuing season of inundation—and aware that the site of the central, or lowest, portion of Calcutta was, for the greater part of the year originally a series of rice ground swamps, I would similarly artificially lower into deep tanks or reservoirs such a portion of the surface as would serve to raise the rest to a level calculated to admit of its being freely and effectually drained into the adjacent Salt-water Lakes, or into neighbouring rivers or water-courses at the periods of their highest inundations, and such it may be observed was nearly the system actually pursued by the Lottery Committee in raising and improving the portion of Chowringhee situated around the Theatre and between it and Short's Bazar, and the European burial ground in Park-street.

Adverting more particularly to existing circumstances I have to remark that the present drains are with few exceptions sufficient for carrying off all the rain water that falls in the course of a day on the roads or streets, and in the areas of the houses immediately adjoining them, but that apart from the portion of rain water thus disposed of, a considerable quantity falls on the (generally larger) compounds, or extensive sites of crowded huts, found interior to the houses fronting the streets or roads, and which never finds its way into the street or road drains—but on the contrary has only the means of flowing into the pits or puddles, or

shallow half-formed tanks, previously alluded to, whose moistening, and keeping damp the adjacent ground, and consequently much adding to the extent of evaporating surface, and of vegetable matter ultimately left to decay, it, until wholly absorbed or evaporated in the dry months, proves one of the sources of fever and of other diseases.

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Inspection of any map of Calcutta, prepared on a sufficiently large and accurate scale, will shew the great extent of surface occupied by such obnoxious tanks or puddles, and rendered subservient to the latter mode of drainage—and it requires to be noted that although the street and road drains, aided by these tanks or puddles, do so receive the rain water which falls in twenty-four hours as to prevent its surmounting or inundating the roads, many of the drains themselves, during temporary cessations of the rains, or on *their* eventual termination, remain partly full, thereby indicating that to a considerable extent they have got dammed up by the road stuff, or other substances, washed into them, or in the case of those unlined by masonry, by the falling in of their soft sides, caused in the earlier part of the rains by currents running through them, not with greater velocity than it is desirable for the purpose of scouring them should constantly be kept up—but stronger than unfaced with masonry, they will bear.

The joint areas of such stagnant ditches only eventually dried up by evaporation, it thus becomes apparent may be added to the total area of the obnoxious evaporating puddle surface—generating rank jungle, and other vegetation, ultimately left to decay—above alluded to.

Supposing the total annual fall of rain in Calcutta to be eighty-four inches or seven feet, it indeed will be found (by a very simple calculation) that a tank, 450 feet square and $34\frac{1}{2}$ feet deep, would suffice to contain all the rain water that falls on a surface 1000 feet broad and 1000 feet long, and further that as a surface of 450 feet square is the $\frac{4}{5}$ and $\frac{1}{5}$ th part of a surface 1000 feet square, that if the $\frac{4}{5}$ and $\frac{1}{5}$ th part or (making allowance for what is daily raised by evaporation) say $\frac{3}{5}$ th part of the total surface of the site of Calcutta were formed into tanks of such a depth, and the remaining $\frac{2}{5}$ th portions were sloped towards them, the entire town might be drained of rain water—without carrying out of it a single drop that fell and without the instrumentality of a fraction of a drain. That the adoption of such a mode of drainage would be rendered much too expensive by the large extent of ground it would lead to the occupation of, and that it would be otherwise objectionable, from such tanks becoming receptacles of filth, likely to remain in a state of putractive fermentation during the dry months, is obvious, nor has allusion been made to it, save for the purpose of demonstrating that (although the roads and streets may be kept perfectly clear of rain water,) the town, until cleared of such pits and pools and stagnant ditches as have been described, cannot be considered wholesomely or effectually drained. By these observations I am far from intending to attach blame to the Conservancy Department, who certainly without funds, cannot convert mud ditches into pukka drains, and who—to the best of my knowledge—have at present no legal right to compel the proprietor of a large compound, or enclosure studded with huts, to fill up the numerous pits, or pools, or ill-formed tanks, it may contain, and, which

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however loathsome, or pernicious to health, having yielded part of the materials employed in raising the foundation of houses and in the construction of huts, and being partly subservient to the purposes of drainage, the lower classes of Natives seem to rejoice in having near their habitations.

Whether the site of Calcutta was originally chosen by accident or by design—I consider that, in so far as regards the means of drainage, it was *well* chosen, and in support of this opinion I, for the present, deem it only necessary to advert to the well known, but most important fact that the lowest part of it, situated in the vicinity of, and intersected by Mutchoa Bazar-street, is on a level $8\frac{1}{2}$ feet *higher* than that of the *highest* surface of the neighbouring Salt-water Lakes, which, from their inland position, and from the tortuosity of the channels connecting them with the sea, are neither so affected by tides, or by the periodical rains, as to show a total difference exceeding three feet, between the greatest elevation and lowest depression of their surfaces.

Bearing in mind these circumstances, it may be remarked that if a channel, suppose *at first* not communicating with the River Hoogly, were opened from near the head of the old Mahratha Ditch at Chitpore Bridge to the vicinity of the European burying ground in Park-street, it would pass through the lowest parts of Calcutta, and approximately bisect all its principal streets running east and west, and consequently all the principal road and street sewers now employed for its drainage. Further, that if this channel were extended from the spot alluded to in Park-street (in a line nearly parallel to the Entally canal), to the nearest western quarter of the southern Salt-water Lake, and were excavated to a depth of $3\frac{1}{2}$ feet below the level of the highest surface of this Lake, the level of the surface of the water in the channel would become the same as that of the Lake. Indeed it will be perceived that such a channel, communicating freely with the Lake, would form as it were an extension of it through the eastern part of Chouringhee, and through the centre of Calcutta.

It moreover may be noted that by intersecting, so as nearly to bisect the principal east and west streets of Calcutta, which at present—draining to the eastward, are on an average about a mile in length, the drains running through the upper halves of these streets or the halves nearest the river might thus be given in the length of half a mile, or say the 900 yards nearest the River, a fall varying *from 20 to 13 feet*, whilst the lower halves of the same streets, or those lying between the circular road and the channel described, could in the same distance, or 900 yards, be afforded an average fall of *ten feet*. It may also be observed that the level of the surface of such a channel would be $8\frac{1}{2}$ feet below the lowest part of Calcutta, which consequently could not but be as effectually drained by it as every other portion of the town, including *Chouringhee*, the upper portions of the east and west streets *of which*, lying to the westward of the channel, would also be (on an average) 900 yards in length, a distance in which the drains running through them might be allowed an average fall of 15 feet, this, while the eastern (and much shorter) portions were each afforded a fall of 10 feet.

Such a channel would of course require to be constructed of dimensions sufficient to enable it to carry off as fast as it fell, all the rain-water falling on

the surface it was intended to drain, and to enable it to do so with sufficient rapidity, and to bear at the same time the incident current, as also to make it occupy as little space as possible, it would be requisite that its bottom, and sides, should be faced with masonry.

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Although it may be admitted that by means of a channel thus formed, or so as to afford to each of the principal drains of Calcutta and Chouringhee an average fall of 12 feet in 900 yards, the Town might during the continuance of the rains, be both effectually drained and scoured, it may justly be contended that unless some other means were devised of permanently keeping up a current through it (although constantly containing water of the same level as the surface of the lake) it would in the dry months become offensive from forming the receptacle of the contents of the drains, washed down into it by the showers of rain falling during these months, or carried into it by water artificially raised and allowed at intervals successively to fall into the drains from aqueducts crossing their heads, or (if water so raised were not employed) by the semi-fluid substances daily swept (by manual labor) down the drains. It will however be found that through the medium of self acting sluices, adapted at each rise of the tide in the Hoogly for admitting into a reservoir connected with such a channel a portion of the waters of the Hoogly, and by other simple expedients, a current sufficiently powerful to obviate all such objections might be made to flow through the channel under any circumstances of river tides or inundation and at all seasons of the year.

In explanation of this assertion let it be supposed that a reservoir of considerable area and of the same depth as the *channel*, the affections of which it is proposed to investigate, were formed near *its* head, in the vicinity of the old Chitpore Bridge, further that this reservoir had been provided with a set of sluices sufficiently large to admit of its being filled to the height of each successive tide of the Hoogly, and so constructed as to retain its contents when the tide fell; also let it be supposed that this reservoir has been provided with one or more sluices opening to the channel, which additionally has had its head or direct entrance into the Hoogly, furnished with sluices, so arranged as always to admit into the channel a portion of the waters of the Hoogly when its tides or inundation brought its level above that of the surface of water in the channel, which by the supposition is the same with that of the surface of the lake.

With reference to such dispositions, and to the most accurate tables of levels, showing that during the dry months the mean low water level of the surface of the Saltwater Lake is $2\frac{1}{2}$ feet below that of its mean low water surface in the rains, it will be found that (independent of the current necessarily kept up in the channel by the opening of the sluices) in its head every time the tide in the Hoogly rises higher than the level of the lake, and necessarily continued from this time till the Hoogly tide falls again below this level (which during the months of August and September, with a short interval at dead low water, will be *constantly*) the head of water retained in the reservoir, and therefore calculated (by opening the sluices connecting it with the channel) to keep up in the latter a current during the time that the surface of the Hoogly would be below that of the lake, would be, as follows, viz. *at the most unfavourable periods*, or during average neap tides :

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					Feet.	Feet.
In the Middle	of January	1	+ 2½ =	3½
In Ditto	of February	½	+ 2½ =	3
In Ditto	of March	¼	+ 2½ =	2¾
In Ditto	of April	...	...	¾	+ 2½ =	3½
In Ditto	of May	...	...	1	+ 2½ =	3½
In Ditto	of June	...	...	2	+ 2½ =	4½
In Ditto	of July	...	...	2½	+ 2½ =	5
In Ditto	of August	...	...	4	+ 2½ =	6½
In Ditto	of September	...	...	5	+ 2½ =	7½
In Ditto	of October	...	...	4½	+ 2½ =	6¾
In Ditto	of November	...	...	3½	+ 2½ =	6½
In Ditto	of December	...	...	3	+ 2½ =	5½

It moreover will be found that at the most favorable periods, or during *average spring tides*, the similar head of water, effective/ for making a scour through the channel, will be—

					Feet.	Feet.
In the Middle	of January	...	...	4½	+ 2½ =	7½
In Ditto	of February	...	...	4½	+ 2½ =	6¾
In Ditto	of March	...	...	5	+ 2½ =	7½
In Ditto	of April	...	...	6	+ 2½ =	8½
In Ditto	of May	...	...	7	+ 2½ =	9½
In Ditto	of June	...	...	7	+ 2½ =	9½
In Ditto	of July	...	...	7½	+ 2½ =	9½
In Ditto	of August	...	...	8½	+ 2½ =	11
In Ditto	of September	...	...	9½	+ 2½ =	12
In Ditto	of October	...	...	9½	+ 2½ =	11¾
In Ditto	of November	...	...	7½	+ 2½ =	9¾
In Ditto	of December	...	...	6	+ 2½ =	8½

It thus appears that by means of such a channel, with a reservoir and sluices, a current might be constantly kept up through the central, (and lowest) parts of Calcutta from the Hoogly to the Lake. But as works (however easy of execution) that are likely to prove expensive would not improbably be considered impracticable, it may *possibly* (and certainly very *correctly*) be urged that the cost of such an extent of ground as would be required for the formation of these works would be *enormous*. Serious as such an objection is, it may, in a great degree, be got rid of by two simple **EXPEDIENTS**, first by carrying the channel (arched over by brickwork *so as to carry the road*) through the widest streets and roads nearest approaching to the general line of direction indicated. *Secondly*, by the less obvious **ONE** of placing the reservoir in the channel itself.

In explanation of the latter proposition (which sounds like a proposal for putting more in less,) it requires to be noted that to enable the channel freely to carry off all the rain water falling *during the season of inundation*, it would require to have a *clear transverse sectional area*, equal to about 232 square feet, (or 29 + 8 feet), which area might (by partition walls) be conveniently divided

into *two small compartments and a large central one*. The latter of which could throughout the whole length of the channel (or as much of it as requisite) be employed in the dry months (or during the season when it would be most essentially necessary,) *entirely* as the Reservoir, which filled at each rise of the tide, through the sluices connecting it with the Hoogly already described, might have the body of water retained in it by the closing of these sluices when the river tide fell, discharged by other smaller sluices into the *side channels*, so as to keep up in *them* the current which (previously to the falling of the tide) the entrance of water from the Hoogly through their own heads (fitted with sluices so constructed as to open whenever the level of the River exceeded that of the Lake) had set in motion.

The reservoir thus formed would (of course) require to be further fitted at the Lake end with sluices so arranged as to close when the tide in the Lake was at its highest level, which in the dry months is probably about 2 feet above its lowest level, and the head of water thus admitted, (allowed to escape at low water in the Lake into it through the side channels) would additionally aid in keeping up the requisite current.

By these means this current might (*with varying velocities*) be constantly kept up in a direction from the river to the Lake. But as the table exhibiting the heads of water in the reservoir in the neap tides of the driest months previously given, shows that at these periods the resulting current would *not be strong*, it becomes particularly worthy of notice that excepting during an hour or two *preceding*, and an hour or two *after high water* in the Hoogly, an *amply powerful* scouring current might during the neap tides of these (the most unfavorable) months be readily obtained through the side channels from the Lake to the River—merely by setting open (or as much so as requisite) the sluices connecting them at one end with the Lake and at the other with the River, and by similarly opening the sluices at either end of the central reservoir an equally powerful cleansing current, in the same direction, and for the same length of time, might (*whenever wished*) be made to flow through the reservoir itself.

It may moreover be noted that in other states of the tide of the Hoogly, or say during the two hours before and after high water *even of its neap tides*, the currents in the side channels (supposing them still left open) would be in the *opposite direction* or from the River to the Lake.

Having been unable to find time to complete a set of plans and sections (*which* involving many laborious calculations could not have been *hurriedly executed*) by which I had hoped to have had it in my power to have illustrated the principles and modes of construction of the works alluded to, and by which I could have demonstrated the practicability of the plan I have now in general terms, and in the absence of such plans, *necessarily*, loosely and imperfectly described, it but remains for me to express my regret at being unable to present an approximate estimate of the expense of the works, which obviously could not be satisfactorily prepared until after every detail had been *accurately* planned.

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Although the question I have hitherto regarded as at issue has not been *the expense* but *the practicability* of effectually draining Calcutta, it may be remarked that even were the proposed channel formed on a new line, or so as to open up through the centre of the town a new, and broad street, running nearly north and south, the cost of its construction might be repaid by allowing the central reservoir to remain open, *and by permitting to be used in it*, subject to a light toll, the smaller class of country boats, by which fire-wood, and every description of produce, could readily be landed (at comparatively little expense) in every part of the town. Supposing it so left open the side channels running parallel to it, and forming the sewers through, which the current would be kept up, could be arched over, so as partly to support towing paths, or roads, which, also serving as puccah wharfs, would speedily become lined with *shops* and *store houses* forming the general (and best ventilated and driest) bazar of this city.

The objection to thus leaving open the main central channel on account of its proving insalubrious from the nature of the fluids and substances received by it would in the dry months be wholly done away with, by the circumstance of its receiving *no such contents*, as in the cold weather, and dry season, these fluids and substances would alone be permitted to enter the *side* channels, proposed to be arched over, and through which they would be carried (by the current resulting from the superior head of water in the central reservoir) as found most convenient either into the Lake, or into the River, and by an arrangement partly similar, aided by the great strength of current readily obtained through the reservoir in the rainy season it could also during this portion of the year be kept in a perfectly pure and wholesome state. It is to be observed that from the softness and looseness of the sides and bottom of the Circular canal, now receiving the contents of the Calcutta drains, it becomes impossible to admit into it such a current as would be required to scour from their *terminations* in the canal the heavier masses of substances they bring down, and which consequently *there* accumulate in a manner injurious to its *navigation*; and it may further be noted that with reference to the nature of the soil in and around Calcutta *no channel unfaced with masonry*, will be found permanently able to bear such a current as, for the purpose of effecting a thorough *scour*, *would be requisite*.

On this part of the subject it may be noticed that the continuation of the main channel I have been regarding the conditions of from Park-street to the Lake, would afford the means of improving the drainage of Entally, and that portion of the Suburbs lying to the eastward of the Circular Road, and that by a feeder connecting the main channel with Tolly's Nullah, to the southward of the General Hospital, the head of water in the reservoir, might occasionally be *considerably* raised, while the feeder, or channel itself (constructed on the same principle as the main channel) might be made similarly to improve the drainage of the southern quarter of Chouringhee, *and the villages adjoining*. The earth excavated in forming the channel might be beneficially employed in filling up offensive pools and puddles, and as it would be always partly filled with WATER, it would readily in *every part of the town* afford the supply OF IT required in the (*not uncommon*) event of fires.

To point out all the details, and all the advantages, incident to the adoption of such a plan, would necessarily occupy many sheets of paper, neither could they

be rendered clearly intelligible, save by the aid of such numerous plans and sections as would (*solely*,) occupy many months in preparation.

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Q. 7. What water is generally made use of for drinking and culinary purposes—is it tank, or well, or river water, and is it wholesome?—A. It is partly river, partly rain and partly tank water, and the latter, excepting obtained from the Loll Diggee, or one or two of the tanks in the Esplanade, is occasionally far from pure, having commonly a strong mossy smell.

Q. 8. Have you any suggestions to offer for the better supply of drinking water whether as to quantity or quality?—A. By the employment of an *eighty* horse power, water lifting, steam engine, and by arched aqueducts, it might be delivered *as pure as it is to be met with in the river* in every quarter of the town, and the greatly increased supply thus afforded might subsequently be made the means of cleansing the principal road and street drains, as previously alluded to.

Q. 9. Where well water is used, are the wells properly attended to and kept clean and free?—A. I believe well water is little used *for drinking*, and that it is rarely found good or wholesome.

Q. 10. Do you think any unhealthiness is occasioned by cultivation in your neighbourhood?—A. Yes, and that two-thirds of the bushy trees, and jungle, in and around Calcutta, and Chouringhee, ought to be cut down *with*, or without, the consent of the owners.

Q. 11. State what is the description of such crops you may think deleterious, and at what season do they become so, and how might any melioration be obtained?—A. I do not believe any of the crops (*not allowed to decay on the ground*,) are DELETERIOUS, and that the trees and jungles above alluded to are principally so, from impeding the circulation of fresh air and by the periodical decay of the leaves of the trees, and the leaves and stems of much of the jungle.

Q. 12. Is there any rank jungle or wild vegetation, which you conceive a cause of disease and where situated?—A. It is found in so many quarters as to render their separate specification impossible—but generally I conceive there is too much in every compound, or garden, in Chouringhee, and in those of the houses adjoining the Circular-road.

Q. 13. Are the huts and houses of the native inhabitants sufficiently separated and apart, to admit of free ventilation, or are they in dense masses? In the latter case would there be any difficulty experienced in opening them out, or in making streets and lanes for that purpose?—A. The natives have a mode of building, and enclosing their houses, peculiar to themselves, and which, being partly the consequence of their desire to seclude from sight the females of their families could not easily be ~~avoided~~, although, by preventing free ventilation it doubtless is, in many instances, prejudicial to health. I have, in a preceding answer, proposed the formation of a street containing a central drainage channel, and which would beneficially open up the most crowded native parts of the town.

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Q. 14. Are there any ruinous or uninhabited houses in your neighbourhood, which are receptacles of filth, or carrion, or grown up with vegetation, so as to be injurious to health?—**A.** An empty compound adjoining (to the northward) that of the house I occupy, is at present in a very jungly state, and the decay of this vegetation renders it at one season of the year in some degree offensive, therefore, *probably*, unwholesome.

Q. 15. Do you recommend any particular spots in which new roads would be attended with advantage?—**A.** Answered in preceding paragraphs.

Q. 16. What description of hut is considered by the natives to be the most conducive to health, the mud-walled or matted, the grass or tile-roofed?—**A.** I believe the mud hut, roofed with grass or (*tiled*), it being warmest in the cold weather and coolest in the hot.

Q. 17. What markets are there in your quarter; are they kept clean, as far as possible, or are they not kept in good order, but offensive to the neighbourhood, and are they for the sale generally of all provisions, or any of them appropriated exclusively to butchers' meat or to fish, or to vegetables, or to two of these descriptions only?—**A.** There are no markets in the quarter in which I reside, and I know but little of the state of those in other parts of the town. Although I believe they might all be greatly improved, in the respects indicated, by such supplies of water as could be afforded from the aqueducts leading it from an eighty-horse power water-lift engine. An engine of this description having no fly wheel, and working its steam on the *expensive* principle being the cheapest that can be employed, from its first cost being much less, as well as its subsequent consumption of fuel.

Q. 18. Is there any one, whose duty it is, to see that the markets are kept clean, is the filth of the native houses in your neighbourhood removed generally out of the compounds, and when so removed, where is it deposited—and when, and how, carried from the place where deposited?—**A.** The first is one of the duties of the Conservancy Department, and, if we may judge from the number of filth carts constantly in motion in the earlier part of the day, much of the filth of native houses, as well as of others, must be removed.

Q. 19 and 20 None.

Q. 21. In what manner are the dead bodies of animals disposed of in your neighbourhood, whose duty is it to remove them, and is this duty properly performed, is there any nuisance occasioned by delay, or neglect in removing them?—**A.** They are carried off in carts, and I have met with no instance of nuisance from delay in so disposing of them.

Q. 22. Mention any native habits which you consider injurious to health?—**A.** Partly replied to in the answer to the 13th question.

Q. 23. Are the burying grounds in any degree neglected, are they so much so, as to be injurious to health, and in either case, whose fault is it, and what would you suggest to remedy the evil?—**A.** I think the Mahomedan burial ground to the southward of the lower Circular-road, in some degree is, and that making the graves in it deeper, so as partly to protect them from the encroachments of jackals, would be an improvement.

No 12.
Capt. W. N. Forbes,
to
Municipal Enquiry,
2d Sub-Committee,
31st August, 1837.

Q. 24. What are the most prevalent diseases among the native inhabitants, and to what extent, and with what effects, has inoculation been introduced?—**A.** Fever, Cholera, Spleen, Rheumatism, &c.

Q. 25. What season of the year is considered by the natives to be the most unhealthy?—**A.** The end of the rains, and the cold weather.

Q. 26. State any general causes of unhealthiness or of discomfort to the inhabitants which you may not have already noted down, state any peculiarly healthy situations, and any peculiarities observed in such places?—**A.** Already replied to, in so far as it is in my power to answer them, save that the value of *house* or *landed* property *in and around* Calcutta is *great* or *small*, in proportion as it is *well* or *ill* drained, and consequently healthy or unhealthy.

The series of questions dated the 10th of September, 1836, have been replied to by the *observations* made in answer to question 6th of the Queries dated September 17th, 1836, *which* (in a general form) include the opinions I have been able to form on the *drainage* and cleansing of the town, and the remaining questions, being partly *legal*, or *medival*, or such as the Conservancy Department have best the means of correctly answering, I have not considered it advisable to attempt to reply to.

W. N. FORBES, *Captain, Engineers.*

August 31st, 1837.

APPENDIX.

No 13.

Town Hall, Monday, 1st August, 1836.

D. Stewart, Esq. M. D.
to
Municipal Enquiry,
2d Sub-Committee,
28th July, 1836.

DUNCAN STEWART, Esq., M. D., *Evidence.*

To Dr. A. R. JACKSON, Secretary to the Committee.

SIR,

I have the honor to acknowledge receipt of your letter of 30th June on the part of the Committee of the Fever Hospital and Town Survey. I beg you to assure the President and Gentlemen composing it, of the cordial interest which I take in their proceedings, and the pleasure it would afford me to be able to assist them in their labors. Were these indeed to begin and to end in the collection and arrangement of authentic statistical information, regarding the population of this city and the causes affecting their health, their happiness, and comforts, they will confer a great obligation on the community, whose future efforts of advancement and amendment will be directed not vaguely and capriciously, but by judicious principles towards definite objects of general and local utility.

The accompanying Notes on the Medical Topography of the 24-Pergunnahs, the country immediately surrounding Calcutta, and tables connected with the statistics of the town and suburbs, are all which I have yet had time to arrange so as to make at all presentable. I submit the former in their avowedly imperfect form rather to evince my interest in the great objects you have in view, and in support of a suggestion which I have to offer, than in any hope of their being at all useful except as "*Memoires pour Servir*" towards the more comprehensive and perfect account of Calcutta and its Suburbs, which the public expect from your joint labors.

By Captain Steel, late Superintendent of Police, I was obligingly furnished with a valuable document which I have the pleasure to forward, viz. a statement of the number of pukka houses, tiled huts, and thatched huts in each division of the town, also a census of the native population made under his own inspection in 1832. It assigns separately the inhabitants actually residing within the town jurisdiction, and the number of persons finding daily employment in town, but residing beyond its limits, of the former the amount is said to be 187,081 and of the latter 37,237, being in all 224,318. This estimate differs from that of 1822, which gave the following results, viz. Hindoo and Mahomedan population 166,365, Christians 13,138. Upon the whole, says Mr. Adam in his report, &c.

" it appeared to be the opinion of the Magistrates that taking the resident population at 200,000, and those entering the town daily at 100,000, the sum would give a tolerably accurate approximation to the real number."

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D. Stewart, Esq. M. D.
to
Municipal Enquiry,
2d Sub-Committee,
28th July, 1836.

In January of the present year a census of the population of the suburbs was made at my request by Mr. Patton, and with great care: the total of all classes is 217,193, excluding from this 73,446 residing at Sulkea on the west side of the River, and 1,796 Christians, the native population of the suburbs remains 141,951. If this be added to the number of actual residents in town, as given by Captain Steel, viz. 187,081, we have the total native population of town and suburbs equal to 329,032, exhibiting a large encrease in ten years. •

As Mr. Patton's census assigns the actual number of children and adults of each class in the suburbs, it furnishes data to deduce the proportion of these to each other: and probably the same ratio exists generally in Bengal, viz. of native children to native adults 1 to 3 nearly, of Christians 1 to 5: from the suburbs I have also obtained, through Mr. Patton's kindness, a statement exhibiting the number of houses, wells and tanks in each division.

I have endeavoured by collating the registers of deaths from the different Christian communities in Calcutta, and those kept by the Police of the natives, either burned, buried, or cast into the River, to compute the rate of mortality that obtains among the various classes of the town and suburbs population—of H.M. Troops in Fort William during four years 1831-32-33-34, the average mortality was 1 to 13. In the late Dr. Burke's Army Medical Report for 1826 he averages the annual proportion of deaths in H.M. Forces in Upper India 1 in 30½; in Lower India (Fort William, Ghazcepoore, Cbinsurah, Berhampore, Ava) 1 in 19.

The registry book of the Cathedral extends as far back as 1759: but I have only availed myself of it for the last ten years, the better to collate its contents with those of four other Christian Churches, viz. the Fort, the two Roman Catholic Churches, and the Armenian Church. From these I find that in Calcutta the average annual mortality of Christians is 1 in 25 nearly, also that, as among the natives, the months September, October and November, are most fatal to Europeans; that the mortality of European adults is greater than that of children in the proportion of five to one, while of Catholics that of children exceeds adults in the proportion of four to one. In attempting to account for this striking difference it must be remembered that the Roman Catholic congregations consist chiefly of Portuguese, and their descendants born in the country for several generations: and the fact confirms the often alleged deterioration which European constitutions undergo when transferred and propagated in a hot climate.

The registration of births and burials is a Christian observance of modern times, owing its institution to the proselytizing zeal which composed lists of those who were baptised and died in the Christian faith. In Calcutta however registers

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are kept by the Police of all the bodies interred or otherwise disposed of. These unfortunately do not mention the age or sex of the individuals, nor can the alleged cause of death be much relied upon ; but I was assured by Captain Steel that he believed a single casualty had not occurred within the town jurisdiction, during the four years 1832 to 1836, (the registers of which he kindly supplied me with,) which was not reported. The number of deaths, Hindoo and Mahomedan, in that time was 48,010 or 12,000 per annum, that is upwards of 6 per cent. or 1 in 15.6 of resident native population.

If we include the aggregate population of the town and suburbs, resident and migratory, and distribute this number among them, the mortality still amounts to the appalling height of 1 in 25. Surely no one can contemplate this fact which assigns to Calcutta an entirely new population four times in one hundred years, without feeling the importance and the immediate necessity of enquiring carefully into the causes of such a fatality with the view of remedying at least or removing them. The rate here assigned, viz. 1 in 25, is the very highest, with but three exceptions which obtains in any civilised city of Europe, viz. Vienna, in which the mortality is 1 in 22½, in Amsterdam 1 in 24 and in Rome 1 in 25. I do not know to what causes the unhealthiness of the first is attributable, but Amsterdam is built in the marshes of the Zuyderzec, the foundations of the city are laid on piles, and it is a common complaint that a house costs as much below ground as above it. Its whole population does not exceed 200,000, and nothing but the industry and perseverance of the people in overcoming the difficulties incident to their situation, and making the waters which threaten to overflow them, contribute to their comfort, preserves it from depopulation. Rome was built, says Cicero, "in regione pestilenti," but no where was the construction of common sewers, and the supply of water more studied or better understood. The sewers were so large and magnificent as to be esteemed among the wonders of the world, and we learn from Pliny that the salubrity of the city was promoted by Augustus who introduced streams of water into them—the neglect and destruction of these in later times has rendered Rome so unhealthy that, in a deplorative letter of Pope Innocent still extant, it is stated that few of the inhabitants reached the age of 40. If we look now to what has been done towards improving the salubrity of our English cities, how encouraging is the picture. London, it is well ascertained by the records of physic, by the bills of mortality and by civil history, was at one time infested by intermittent fever. King James the First and Oliver Cromwell died of agues contracted in London. Disease was very prevalent in its filthy and crowded purlieus until the fortunate fire in 1666 ; but it was not merely the rebuilding of that part of the town on a better plan which effected the extinction of the plague and the diminution of sickness. Energetic measures were adopted by the legislature and the magistracy for the removal of filth, the improvement of the common sewers, the widening and paving of the streets. It is to measures such as these conducive to cleanliness and dryness, says Blane, more than to the improved habits of life, that the present unexampled state of health in this metropolis is to be ascribed.

The annual mortality in London in 1750 was about 1 in 20, in 1821, it was 1 in 40. So that in the space of 70 years the chances of existence had exactly doubled. In the town of Manchester, the second in England, a still more pleasing picture is exhibited : for it is stated by Dr. Percival that in 1757, the annual mortality was 1 in 25.7, in 1770, 1 in 28, in 1790, 1 in 58 and in 1811, 1 in 74.

This unexampled improvement in health, says Blane, is clearly imputable to certain regulations of Police, particularly with respect to ventilation, recommended by the above mentioned benevolent, enlightened and active Physician : since that time much has been due to Dr. Ferriar, who followed the footsteps of Dr. Percival.

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Of the improvement to be effected by drainage one of the best illustrations is afforded by the town of Portsmouth. It is built upon a flat composing part of the marshy island of Portsea. Previous to the draining and paving of the town in 1796, intermittent fevers were very prevalent, they are now unknown there," while Hilsea and other parts of the Island retain their aguish character. In 1800, the deaths in Portsmouth were 1 in 28, in 1810, 1 in 35. Numberless other examples might be adduced of the improved state of health in towns from the inclosure of neighbouring commons for the purpose of agricultural improvements, whereof drainage is one of the principal.

The few suggestions which, at the request of the Committee, I will venture to offer, I do with great diffidence, since I am more than doubtful of the practicability of some of them, and really have not had time to make the necessary enquiries.

I must however first be allowed to disclaim all adherence to the postulates of malarians. We have yet too much to learn, or in other words we know but little or nothing regarding the nature of those subtle exhalations from certain soils, called miasma and malaria, and of the laws which govern their production and distribution. Its sources are often doubtful and its modifications by climate, by soil, by the electric and barometric conditions of the atmosphere, and many other agencies, often set at defiance all theory on the subject. Thus in Guzerat, one of the finest and richest provinces on the Bombay side of India, and cultivated like a garden—miasm is abundant and destructive. On the south-west side of Ceylon, covered with jungle and rice cultivation, in a hot and moist climate, possessing in fact all the known elements of insalubrity, endemic fever is unknown, while at Trincomalee, on the other side of the Island, the worst jungle fever exists : Again, the town of Singapore, situated in a low country and surrounded by wild mangrove marshes, the whole interior of the Island covered with jungle, is pronounced one of the healthiest places in the east, while the Maldivé Islands, placed in the midst of Ocean's purest breezes with a calcareous soil, without a river, marsh, or pool of any kind, with an abundant population and no useless vegetation, are subject to fevers of the worst description.

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"It may be affirmed however," says Sir Gilbert Blane, "as a general truth all over the world, that the great difference of one country from another in point of salubrity consists in the greater or less proportion of that soil which exhales those noxious effluvia which produce intermittent and remittent fevers."

Now, however undeniable the generation of these exhalations in certain arid places; it is ascertained beyond all denial that water in a state of Stagnation, without any ascertainable principle of contamination, is all that is necessary to disengage those miasmata which are latent in alluvial soils. It is to the absence of stagnation in the waters of the Nile that the healthiness of Lower Egypt was ascribed by Strabo, a remark to the truth of which Sir James McGregor bears testimony. The Deltas of the Rhine, the Po, and the Ganges bear ample evidence of the converse of the proposition. The whole Island of Zealand seems to have been formed from the detritus carried down by the Rhine and Scheldt and accumulated for ages. Walcheren is a dead flat below the level of the sea at high water, and preserved from inundation by dykes. The soil consists of a fine white sand or "silt," and about a third part of clay.

It is divided into small square enclosures by dykes and ditches which serve as drains and they are generally half full of turbid water. They emit no disagreeable smell. It is not necessary to repeat the history of Walcheren mortality here.

In South Carolina where rice is extensively raised by a similar cultivation to that of Bengal, namely, in enclosures of water, by ditches and dykes, the hospitals in autumn are filled with victims to this unhealthy occupation. The destruction of life consequent to it is very great, and fresh supplies of Negro Slaves from the more northern states are constantly required to make up the number of those who are unfortunately destined to shorten their days amid the marshy exhalations of a rice ground.

In the rich meadows of Lombardy devoted to this cultivation, over which the waters of the Po are made to flow, but are retained upon the surface by dykes and embankments converting the whole country into a marsh, this branch of agriculture is followed by similar evil consequences—there however *the Government of Milan has restricted the cultivation within certain limits, beyond which rice is not permitted to be grown.*

Now, as there must be a point where marsh miasm like other Etherial poisons is dissipated; without attempting to assign its exact position, we may surely conclude that a belt of well drained land of four miles in width round the town and suburbs, from which all rice cultivation should, by legislative enactment, be excluded, and the bunding or marsh making system prohibited, would prove a *cordon sanitaire* of great efficacy.

A system of sluice drains like those of Holland or Lincolnshire, or such as those used so successfully at the Botanic Garden and Bishop's College on the

west side of the river, and which have rendered the land in that neighbourhood particularly healthy and fitted it (by allowing it to be manured) for high land cultivation, so that it is the best near Calcutta for garden and vegetable produce, would surely be very practicable at the back of Garden Reach and to the south and east of the town where such facilities are afforded by the trajet of Tolly's Nullah and the slope to the Salt Lakes.

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In the suburbs east of the Circular road, of which Mr. Martin's general description is excellent, there can be no doubt that great and important improvements might be effected by opening up great arteries in the direction of the prevailing winds, and others to cross at right angles, prohibiting in future the building of houses except on certain lines, and indemnifying the parties, as might now easily be done at a cheap rate, upon the principles adopted in England.

A broad high road parallel to the Circular road about half a mile east, might run from Mr. Ainslie's house on the body guard parade at Ballygunge to the first bridge on the Entally canal at McPherson's bazar, the two large tanks, viz. Mr. "Beeby's," and that called "Toolsee Ram Baboo ka Diggy," which are said to be the only good ones in the suburbs, might be made the centres of two large and open squares, and cross roads might be laid out through the intervening suburbs in conformity with the general plan of Calcutta. The advantages of the proceeding would not be confined to that part of the town alone, but would extend to Calcutta in an important manner by abolishing the sources of malaria with which the suburbs abound, and by attracting native population and trade to the neighbourhood of the canal.

In the course of my daily travels through the native town it is impossible not to be shocked at the present dreadfully bad state of the drains, &c. The Conservancy Department I believe does all that can be done, but they have a bad material to work upon, a city built in the midst of a marsh.

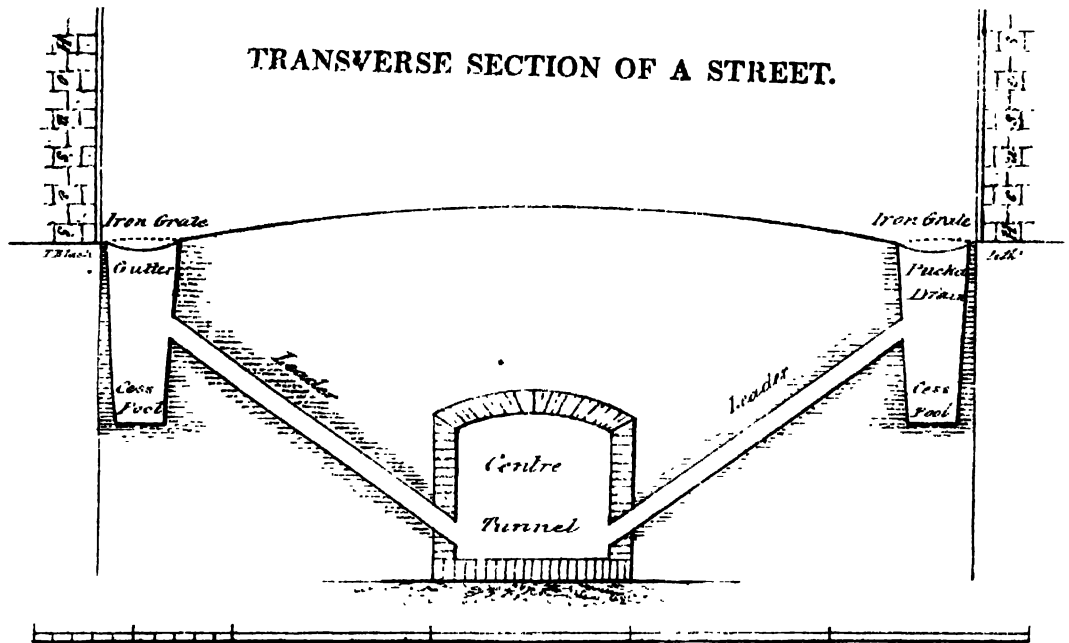
Sulphuretted hydrogen is evolved copiously in all directions from stagnato drains and ditches: within the last fortnight I have known the whole family of a respectable and wealthy native, attacked with malignant fever from this cause alone. I am of opinion however that an abundant slope could be found or arranged for keeping the city "scoured," but water must be found to do it with—for filth never runs freely.

It is probable that the greatest improvement in the drains of the town would be to make one large covered drain of conveyance in the middle of each street, with iron gratings and transverse leaders at different distances—this would leave the sides of the streets clean or CLEANABLE, would give a better appearance to the thoroughfares than the present filthy ditches and aqueducts, which only serve to endanger carriage wheels and for the natives "de faire des ordeurs", would materially widen the streets and facilitate the intercourse along them, and would have the advantage of hiding the evil at least of the stench which is now to be complained of—but great perfection might surely be attained, if a stream of water

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were kept constantly flowing through these great centre drains so as to prevent the accumulation of fetid matters. This stream would only be obtained artificially by power, and somewhere about the new Mint which is the highest part of the town, would be the best situation for a steam engine and a reservoir of water for this purpose; some years ago Mr. Blechynden I believe proposed covered drains, I know not why they were not adopted. The town of Chelsea which lies considerably lower than high water mark is thoroughly drained in this way. This is a sketch of the plan I think would answer.



With regard to water much might be done. The Hooghly River water is very excellent during the rains. The best water in town in the dry season is from the Loll Diggy which is filled annually by means of a channel from the river. I believe Wellington Square can be filled also from Chandpalghat engine; good water might be made abundant through the native part of the town by the same means, and by selecting old existing tanks. Bad tanks or useless holes ought to be condemned by Magisterial fiat wherever they exist. The natives always attribute the unhealthiness of the season to water. Their common expression is "the water is bad this year." I believe well water is but little used for culinary purposes by either Europeans or Natives.

The frequency of fires might be diminished by forbidding thatched huts to be built, and their destructiveness greatly lessened by the establishment of such reservoirs as have been recommended.

With regard to the proposed Fever Hospital I am anxious to record my opinion, though but that of an individual, of the urgent duty and necessity existing for such an institution; to testify also to the high value and estimation which the Native poor will set upon it; and to point out the extensive good which in various ways may be expected to follow. Of the first no one can doubt who has beheld

the thousand poor and famished and diseased objects, who collect round a rich man's door when his intention to distribute alms has been announced. Or who has ever ventured to visit the haunts of misery and filth and sickness where these poor wretches retreat to die "insensible to mortality and desperately mortal."

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Of the eagerness with which thousands will avail themselves of the boons thus charitably offered of shelter, of food, and of medicine—no one the least acquainted with human nature will doubt, but it is well to state that the Natives, both rich and poor, have an extravagant opinion of European medical skill and a confidence in it only equal to their submission to the will of Heaven.

The rich feel satisfied that they are not trifled with or kept on the sick list for the sake of prolonging an Apothecary's bill, and the poor are too thankful to find any one who will take a moment's interest in their fate.

Another consideration is almost equally powerful. Human life will be largely preserved and we may hope with advantage to society and to individuals. An example of public philanthropy, untainted by any political or private *jobbery*, cannot fail to have a powerful moral influence upon the minds of the Native community, and this effect will be still more promoted if the persons to be employed, if all the Offices connected with the institution without any exception, are declared open to Natives. I do not mean that in the first instance it will be possible so to distribute them, but I think as far as possible the attempt should be made. The New Medical College will soon be able to furnish a corps of active, intelligent and accomplished youths, who will engage with professional zeal and ardor in the cause. I should like to see four of them at first appointed House Physicians, and that they should be taught to keep the Hospital Diaries and conduct all the details of the institution as the Assistant Surgeons do of the General Hospital, and that the office merely of Superintendent be entrusted to an Englishman. Should the funds of the institution increase so as to admit of it a few might also be employed out of doors in domiciliary visits, and in exploring the foci of disease, but this must be considered altogether subordinate in utility to an hospital where more real public relief may be afforded by four or five men than by a hundred disseminated over the town.

The subjoined is a list of the Documents which accompany this paper.

- No. 1.—Hindoo and Musselman mortality in Calcutta for 1832.
- No. 2.—Ditto ditto for 1833.
- No. 3.—Ditto ditto for 1834.
- No. 4.—Ditto ditto for 1835.
- No. 5.—Summary of Native mortality for four years, 1832 to 1836.
- No. 6.—Population returns and statement of number of houses, &c. in Calcutta, by Captain Steel, 1832.

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No. 7.—Annual average rate of mortality among natives.

No. 8.—Register of European mortality for ten years, ratio of mortality for each year, and average.

No. 9.—Table showing what months are most fatal to Europeans' children and adults, and the ratio of mortality.

No. 10.—Table showing what months are most fatal to Catholics, and the comparative mortality between adults and children.

No. 11.—Table showing which months are most fatal to Native population.

No. 12.—Statement of the houses, wells and tanks in the suburbs of Calcutta.

No. 13.—Census of the suburbs, proportion of children in different classes.

No. 14.—Register of strength and mortality of European corps in Fort William for four years.

I have the honor to be,

Sir,

Your most obedient Servant,

DUNCAN STEWART,

2d Assistant Surgeon to the Presidency General Hospital.

NOTES
ON THE MEDICAL STATISTICS AND TOPOGRAPHY OF
CALCUTTA.

No. 1.
 D. Stewart, Esq. M.D.
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HISTORICAL NOTICES.

In an old work printed in London 1555, entitled the "Fardle of Facions" by William Watreman, are the following notices of "Easterne Ynde" and its inhabitants.

"The Ganges far passeth in greatness all the floods. The land on each side " by benefit of the battling breath of the gentle west wind reapeth corn twice in " the year. Other winter it hath none but the bitter blasts of the easterly winds. " They have two summers, a mild air, a rank soil, and abundance of water, " divers of them live an hundred years and more, they live a pure and simple life " being led with no lecherous lusts of other men's vanities. Pestilence or other " diseases they are not annoyed with, for they infect not the air with any filthy " doings. Their physic is abstinence which is able not only to cure the malady " already crept in, but also to hold out such as otherwise might enter."

In 1632 the capital of Bengal was Malcondi, a town somewhere on the west bank of the Hooghly, which according to the account given of it by Master William Bruton, quarter master of the good Ship Hopewell of London, burthen 240 tons, must have been a place of considerable size and magnificence, it was the residence of a splendid court.

The City of Bengalla is supposed by Rennell to have been situated upon an Island at the eastern mouth of the Ganges, but no trace of it now remains.

It is described by Master Bruton as being in his time "very great and populous. It hath many merchants in it and yieldeth very rich commodities. It is likewise famous for its multitude of rhinoceros."

The town of "Galgota" or "Calcutte" is mentioned by several Dutch Navigators of early times, but without any distinct position assigned to it.

The earliest English authentic account of the place is given by Captain Hamilton who visited it in 1706, when it was the "Emporium of British trade" and possessed a considerable number of English residents, and a Fort for the protection of the trade. The settlement he narrates was founded by Mr. Job Charnock, the Company's Agent to India in 1690. This Gentleman having obtained permission to form an English settlement on the bank of the river, seemed to have been greatly at a loss in fixing upon a proper situation, since besides

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residing at Barrackpore, which still bears his name, he also settled at a village on the west bank called Ulabarea, "but that place proving unhealthy he solicited and obtained permission to remove to Sootamutty on the opposite side," and seems finally to have been influenced in his choice by the existence of a particularly fine shady tree, not far from that place. He lived, says his biographer, long and happy many years, having married a Hindoo widow whom at the head of his guards he rescued from the funeral pile, where she "was about to act the tragical catastrophe of burning with her deceased husband."

The old Fort was built in 1696. Its site is now occupied by dwelling houses and the new Custom House. It was an irregular tetragonal building of brick and mortar, facing the river for two hundred yards. A wall four feet thick surrounded it at a distance of twenty yards and enclosed a range of warehouses. Beyond these, and outside of the wall, were scattered the houses of the English inhabitants upon the bank of the river, with enclosed gardens to each dwelling. The space thus occupied might be half a mile north and south of the Fort, and six hundred yards east. The Native Town lay to the north east inward.

Calcutta possessed at that time a Church "built by the pious charity of merchants, and the Christian benevolence of seafaring men," and "a pretty good" Hospital, where many go in to undergo the penance of physic, but few come out "to give an account of its operation."

Captain Hamilton seems to have been forcibly impressed with the badness of the locality on the score of healthiness. Mr. Charnock, he says, "could not have chosen a more unhealthy situation on all the river, for three miles to the eastward is a Saltwater Lake, which overflows in September and October, and prodigious numbers of fish resort there; but in November and December, when the floods are dissipated, those fishes are left to die and with their putrefaction affect the air with thick stinking vapours which the north east winds bring with them to Fort William; so that a great yearly mortality is caused by them." Of the west bank of the river, at Howrah opposite Calcutta, he says "that, for many reasons had been a better place to have built their Town and Fort. One is that where it now stands the afternoon's sun is full on the front of the houses and shines hot on the streets. Whereas had the Town been on the other side of the river, the sun would have sent its hot rays on the backs of the houses and the fronts had been a good shade for the street."

In 1742 the Township of Calcutta was limited and defined by a ditch, begun as a protection against the Mahrattas, commencing about three miles to the north of the Fort, where a deep muddy gully *debouched* into the river. It was meant to surround the Town, and fall again with the river about the same distance below the Fort but was never completed. The country itself to the south east is said by Orme to have been so full of swamps, so intersected by water courses, and Nullahs as to be almost uninhabitable. In the rainy season in fact, he says, it might be called an entire lake, "*sinking as it does about ten feet below the level of the plain.*"

This seems to have been the general character of the country to the east and south east, from the Salt Lake as far Fulta and Budge-Budge, i. e. for 20 or 30 miles, while to the north and north east the land was higher and thickly covered with groves and jungles.

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The earth excavated in forming the ditch, was so disposed on the inner or townward side as to form a tolerably high road, along the margin of which was planted a row of trees and this constituted the most frequented and fashionable road about town; the streets of Calcutta followed their present direction. One, the principal, lay due north and south along the bank of the river, and close to it, though now so distant, and retains the name of "Clive Street." The other called the "Avenue," ran east and west, the present Durrumtollah. They are described as being well raised causeways, the materials for their elevation being found by deepening the ditch on each side.

The present Fort, (which will be more fully described afterwards) was begun in 1758, "upon a scale" says Orme "of expense, which its founder Lord Clive had no intention of." A fatality seems to have attended our selection and arrangements in every thing connected with the accommodation and healthy bestowal of our European troops in Bengal. The late Dr. Burke, Deputy Inspector of Hospitals, in his official reports describes Fort William as one of the worst, if not the very worst of the Military stations in India.

"The buildings are too crowded together, the estimate of space, and of domestic convenience has been too confined for the climate, the apartments for the men are deficient in height and ventilation. From the crowding of the buildings the height and proximity of the fortification, the radiation of heat is not only very great, but there is prevented the dissipation of those malarious vapours, of which there appears to be so copious a supply from various sources in Fort William."

The gradual increase of the town is marked by a rapid succession of public edifices, the removal of nuisances, and numerous other topographical improvements towards the end of the century. In 1787 the present Cathedral Church of St. John was consecrated. It was built "beyond the boundaries of the Fort in the environs of Calcutta." In 1790 was established the Free School for European children, and the same year 17 boys and 12 girls were admitted on the foundation. In 1799 the foundation of the new Government House was laid, and the new Portuguese Church at Boitaconnah was consecrated. About this time was also opened "the House at Howrah" for the education and maintenance of the Orphans of Military Servants, by the Bengal Military Orphan Society, instituted in 1787. Under the auspices of the Marquis Wellesley all the roads in and about Calcutta were greatly enlarged, widened, and made conducive to public convenience and health. "Now," says a flowery writer in one of the Journals of the day, "on the new Circular Road of Calcutta, the young, the sprightly and the opulent during the fragrance of morning, in the chariots of health enjoy the gales of recreation."

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In the course of these improvements fell the famous *bytha-kanna* tree (literally sitting down tree) probably the same whose shade captivated the Venerable Job Charnock,—as it stood in the way of the new road which to this day bears the name of Boitacannah.

This tree in former times was the place of rendezvous for caravans which traded to and from the districts. Here the merchants met to depart in bodies from Calcutta, to protect each other from robbers in the neighbouring jungle, and here they dispersed when they arrived at Calcutta with merchandize for the Factory.

With regard to the population of Calcutta then, as now, very imperfect information is procurable. Captain Hamilton mentions that when he was there one year (1700?) “there were reckoned about 1,200 English, some Military, some servants of the Company, some private Merchants, and some Seamen.”

At the capture of Calcutta in 1756, there were not more than 70 houses belonging to the English in the town, and the number of native houses was estimated by Mr. Holwall at 9,451. The native inhabitants in the four villages close to Calcutta included under the Company’s protection, he estimated at about 400,000. The Garrison at that unlucky hour consisted of 300 Europeans, of whom 146 were shut up in the black hole, and only 23 came out alive the following morning.

The more recent improvements in the town, under the auspices of the Lottery Committee, will be particularly described afterwards.

DESCRIPTIVE NOTICES.

Generally speaking, says Rennell, the description of one Indian City is that of all, they being all built on one plan with exceeding narrow confined and crooked streets, with an incredible number of reservoirs and ponds, and a great many gardens interspersed. A few of the streets are paved with brick. The houses are variously built, some of brick, others with mud, and a still greater proportion with mats and bamboos, and these different kinds of fabrics standing intermixed with each other form a motley appearance. Those of the latter kind are invariably of one story and covered with thatch. Those of brick seldom exceed two stories, and have flat terraced roofs. The two former classes far outnumber the last which are often so thinly scattered, that you do not sometimes meet with the obstruction of a single brick house through a whole street.

Calcutta is partly an exception to this description, for being comparatively a modern Town, and during its progress having been more or less influenced by European taste, even the native Town has fewer national faults than the old towns of Dacca, Moorsshedabad and Benares; while the English quarter exhibits whole ranges of well built brick houses or magnificent detached mansions of lofty structure, with pillared verandahs to the south, not unjustly obtaining for Calcutta the name of City of Palaces.

Calcutta is situated Lat. 22° 23" N. Long. 88° 28" E. on the eastern bank of the river Hooghly, a branch of the Ganges. It is about 100 miles from the sea, the river being navigable considerably farther. Fort William is built on a projecting bank of the river on the same side, and about half a mile south of Calcutta. It occupies an area of half a mile in diameter, about a fourth part of ramparts face the river. On the other sides it is surrounded by an open green plain not less than half a mile wide at any part. By this it is separated to the north from the Town of Calcutta; on the east from the extensive and fashionable quarter of Chowringhee, and at about an equal distance south there is a navigable Ditch, called Tolly's Nullah, which marks the boundary of the Suburb of Kidderpore. This Ditch first runs inland in an easterly direction for about a mile and then bends south.

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It is spanned by three Suspension Bridges leading to the Suburbs of Kidderpore, Allipore, and Bhowanipore. From the last of these proceeding northward after a short course easterly, leads the Circular Road, a broad and well constructed highway which may be said to be the boundary of Calcutta. A populous Suburb Town skirts its east, chiefly inhabited by the middle and poorer classes of Europeans, and Natives, and built in the most irregular way. At Chitpore the last Suburb to the north of Calcutta the Circular Road inclines west and approaches to within half a mile of the river, it then crosses the new Circular canal, a magnificent work of recent construction, which connects the river with the Salt Lakes.

The distance along the bank of the river between the mouth of this canal and that of Tolly's Nullah is about three miles and a half, the average distance of the Circular Road from the river is one mile and one furlong. Within this area are included the Town and Fort.


A review of the Medical Topography of Calcutta naturally arranges itself into three heads, namely, that of the Suburbs, the Town and the Fort.

Before however entering upon a minute examination of these, it will be necessary to premise a brief account of the surrounding country with reference particularly to its *climate*, its *soil*, the *sources of aqueous exhalation*, the *constitution and habits of the population* and the *animal and vegetable products*.

THE CLIMATE

Of Bengal must be always considered the first and most important agent in the production and propagation of disease.

We shall examine it in relation to its temperature, its humidity and its variability, believing that public health is more influenced by the steadiness or mutability of the climate, or considerable anomalies of weather, or physical properties, than by either its heat or its cold abstractedly considered.


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Its geographical position assigns to Bengal the average high temperature of the tropics, its low and level surface, its proximity to the sea, its intersection by numberless canals and water-courses formed by the *debouchement* of two great rivers through a nearly level plain, the imperfection of the drainage generally and the existence of more than one extensive Saltwater morass and innumerable ponds, tanks and ditches of stagnant water, together with the annual inundation of the tropical rainy season, account sufficiently for the humidity of the climate. In respect of equability, the progression of the seasons may be said to be regular: the range of the Barometer as in most tropical countries is small, and is seemingly little affected by changes of temperature, that of the Thermometer is greater than would be expected, the alternations of heat and cold which take place in the course of the year, and sometimes during the twenty-four hours being frequently sudden and considerable.

The year is popularly divided in Bengal into three seasons, of about four months each, viz. the cold weather, the hot, and the rains, the former commencing on the 1st of November, the hot weather 1st of March, and the rains fairly established on the 1st of July. Besides these there is a short season called by the Natives the *chota bursat* or little rains, which occurs in the end of May or beginning of June, and lasts for eight or ten days, while at the breaking up of the rains and before the establishment of the cold weather there usually intervenes a month of excessively sultry and muggy weather.

The four winter months are pleasant, the sky is clear and serene, the air dry and bracing, a steady northerly breeze prevails, the sun however is powerful, and exposure to its direct rays for any length of time cannot be borne with impunity by the unacclimated. Owing to the clearness of the sky a heavy dew falls at night and a thick fog spreads over the plain and the surface of ponds and water courses, the fall of the Thermometer at sunset is very rapid and its daily range is about 20° , its mean elevation is 68° , that of the Barometer 30.07. Ice is made at Hooghly, about 40 miles from Calcutta, in clear nights, by a simple arrangement of shallow dishes, which aids the radiation of caloric from the surface.

The greatest cold ever observed in Calcutta does not exceed 42° in the open air, yet Europeans who have resided some years in the country generally feel and suffer from this temperature very severely. Owing to the long continued over-excitement and consequent relaxation of the cutaneous surface during the hot weather, and their inability from habit and circumstances to take sufficient exercise in the open air, frequently also from neglect of suitable warm clothing the skin becomes dry and chilly, or morbidly hot-perspiration is at an end—the biliary, urinary, and alvine secretions are sympathetically checked with that of the skin—internal congestions arise, fevers, and other evil consequences follow—these effects are very apparent at the commencement of the cold weather, but have generally subsided or been remedied by the middle of December, from which time till the middle of February sickness nearly disappears or is the result only of culpable imprudence.

The hot weather may be said to be established by the 1st of March; its approach is marked by a change of monsoon, and a shortening shadow as the sun advances to the tropic.*

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The high temperature is at first however sufficiently bearable in the shade at least, owing to the prevalence of a southerly or south west breeze, which generally lulling towards sunset, freshens during the day as the sun approaches the meridian. The air is dry and elastic. It is cooled in some years very regularly every evening by a heavy ~~pour~~ of rain, accompanied by a burst of wind from the north west, which besides cooling the sultry atmosphere, and moistening the parched and exsiccated soil, benefits Calcutta in a special manner by laying the clouds of dust which float in the air during the day to an inconceivable amount. The houses in India are universally more open and better ventilated than in England, so that it is found quite impossible to exclude entirely this subtle powder by any arrangement consistent with comfort. Furniture, books, clothing and viands are every where covered with it before evening, and as stated to be the case at Malta in similar circumstances, there can be no doubt of its injurious effects on the eyes and lungs.* The passage of a *north wester* over a portion of country has while it lasts, the rapidity and violence of a "Simoom" or hurricane, it is generally confined to a narrow space not more perhaps than a mile in width, and is always attended with a transference of electric fluid between the black dense cloud which embodies the storm, and the ground over which it travels at no great height, —the exchange is indicated by loud thunder, and brilliant flashes of lightning which precede the rapid advance of the storm, like the flying artillery of a great army, in silent and steady movement. The atmosphere having adjusted its electric balance and now greatly cooled by the rain becomes perceptibly lighter and more respirable. During the hot weather the Thermometer ranges from 65° to 94° in the shade, the mean heat is 86°, Barometrical elevation 29.60.

* Dr. G. Fordyce was of opinion that the dust of the Streets of London was of serious detriment to health by exciting pulmonic diseases — Tr. Soc. for Prom. Med. Know. Vol. I. p. 252.

In the month of May, the south wind begins to bring with it nightly haze and clouds, these prevent the formation of dews, the air becomes less elastic and more moist and *muggy*.

In this state it is unable to carry off the impalpable cutaneous transpiration, the body becomes clammy from constant profuse, and debilitating perspiration and peculiarly susceptible of impression from external causes, the balance of circulation and nervous energy, is greatly disturbed, secretions are either checked, vitiated, or excessive, and sickness is prevalent.

In the beginning of June the wind veers towards the east, the sky is now very constantly and uniformly cloudy. A gale from the south east of some days duration and considerable violence generally ushers in the rains in this month, and these are fairly set in on the 1st of July.

* Is the Oriental Benediction "may your shadow never be less," meant to shield its object from the horrors of a vertical sun.

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This season the remarkable feature of tropical climates, is well marked in Bengal, the rains at first set in with thunder-showers, sometimes heavy, sometimes light, generally from the south and east, then follow several days of very heavy rain, during which the sun is completely hid from view, then there is show of fair weather with sunshine, clear nights and oppressive sultry weather. The heavy rain rarely keeps up for more than 48 hours at a time, then gradually diminishes to drizzling and at length gives way to fair weather.

At frequent intervals during the whole period of their continuance there is much vivid lightning with violent thunder-storms and strong gusts of wind, the wind frequently changes from east to south and west, rarely to north. Its return to east and fixing steadily in that quarter is usually accompanied with heavy rain. The cloudiness of the sky, and absence of bright sunshine make the weather, generally speaking, pleasant, the mean heat is about 81° , the range of the Thermometer being from 77° to 90° . The mean elevation of the Barometer is about 29.45 and varies but little from this, the air is so surcharged with moisture that every thing exposed to it gets damp and mouldy.

From the middle of May till the 1st of August the sun may be considered nearly vertical to Calcutta at midday, and there is but little decided change in the weather till the middle of October—towards the end of September the showers have become fewer in number, more heavy and of shorter duration, the wind becomes variable, the days very sultry, the night close and oppressive. At length the occasional veering round of the wind to the west north west, the disappearance of clouds and vapours upon the horizon, the sharpness and dryness of the morning air, the rapid rise of the Barometer and concomitant fall of the Thermometer towards the end of October, evince the departure of the rains and the return of cool weather.

The whole quantity of rain falling during the season varies much in different years, its average however in Bengal cannot be under 80 inches.

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The following Table exhibits the Mean for each Month of Meteorological Observations at the Assay Office, Calcutta, for the year 1835.

YEAR 1835.	Observations at 10 A. M.										Observations at 4 P. M.							Register Thermometer Extreme.	Rain															
MONTHS.	Standard Barometer at 32°.		Wet Barometer ditto.		Aq. Ten deduced.		Thermometer in Air.		Wet bulb Depression.		Leslie's dif Hygrom.		Hair Hygrometer.		Standard Barometer at 32°.		Wet Barometer ditto.		Aq. Ten deduced.		Thermometer in Air.		Wet bulb Depression.		Leslie's dif. Hygrom.		Hair Hygrometer.		Cold on roof.		Heat in Sun.		WIND.	Inches.
January,	29.997	.314	.683	.67.8	8.0	7.6	84.	.908	.127	.781	70.7	11.5	10.6	74.	0	0	Northerly.	0																
February,.....	29.988	.172	.816	74.3	6.0	6.2	91.	.876	.975	.992	76.6	10.2	10.7	70.5	58.5	115.1	Change of Monsoon.	0																
March,	29.921	.940	.985	79.8	8.3	7.2	89.	.795	.671	1.124	83.6	13.0	13.9	74.	67.4	117.2	Variable.	.85																
April,.....	.874	.677	1.198	84.6	7.6	7.6	90.	.752	.400	1.348	88.1	12.7	12.7	79.	71.4	117.7	Southerly.	2.25																
May,.....	29.683	28.388	1.293	86.8	6.5	6.3	93.	.577	.206	1.368	88.3	7.5	7.6	90.	76.4	108.7	Southerly.	15.85																
June,.....	29.561	28.311	1.240	86.1	5.6	3.8	90.7	.480	.179	1.282	87.4	6.9	7.0	89.	76.7	110.2	Variable.	11.50																
July,.....	29.467	28.335	1.142	82.7	4.0	3.2	92.	.405	.207	1.186	85.3	4.8	4.1	92.	76.1	94.1	S. S. W.	17.75																
August,	29.591	28.480	1.176	84.0	4.0	3.6	96.	.329	.327	1.203	85.0	4.3	4.3	95.	76.4	95.3	S. and E.	11.60																
September,	29.702	28.514	1.169	83.7	4.8	4.1	95	.599	.371	1.201	85.0	6.8	5.0	93.	76.0	101.8	Changeable.	9.34																
October,	29.826	28.680	1.155	83.3	6.8	6.2	91.	.707	.515	1.207	85.1	9.3	7.5	86.	74.4	117.0	North Monsoon set in.	5.95																
November,	29.925	28.108	.914	75.6	7.7	6.6	89.	.935	.932	.966	77.9	10.0	6.5	83.	62.7	96.8	North.	3.14																
December,.....	30.038	29.312	.716	69.8	6.1	5.8	88.	.927	.143	.787	72.0	8.9	6.2	82.	53.3	82.805																

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The natives make the unhealthy season to coincide with ours, but there are many additional influencing causes with the poorer classes, who have recourse to several very inferior objects of food from motives of economy or want.

THE SOIL.

The Delta of the Ganges may be said to occupy a triangle whose apex is at Jellinghy, a village in Rajeshye, Lat. $24^{\circ} 10' N.$, Long. $88^{\circ} 48' E.$ and distant in a straight line 165 miles from the sea. The base is an irregular line of coast about 180 miles in extent, between Chittagong and Balasore, at the head of the Bay of Bengal. The main stream of the Ganges passing through the District of Dacca may be considered the eastern limb of the triangle, and its western is the river Hooghly on the bank of which Calcutta is situated. The whole of this space is an alluvial plain, the average level of which is scarcely 10 feet above the sea, and many parts much less. It is intersected in all directions by branches given off from the Ganges which communicate freely with each other in their tortuous course to the sea. The line of coast where these *debouche* is farther traversed by numberless creeks and back water channels for the tide, forming, with the fresh water of the streams which it encounters, a perfect labyrinth through which boats find a perilous and difficult passage amidst contending tides and eddies.

The Soonderbunds, or coast line just mentioned, may be described as a desert range of islands, of a compact siliceous soil, mixed with tenacious mud and flooded at high tides—each island is surrounded by a belt of mangroves, and is covered thickly by a jungly stunted vegetation of the most worthless and wretched description. It consists chiefly of an underwood called by the natives “Kaukra” (or crab-tree) the “Baun” and others scarcely fit for fuel.

The only wood of any value being the “Soondrie,” which though by no means abundant has given its name to the District, and is valuable to wheelwrights, coach-makers, and boat-builders. As soon as the salt water is banded off at any part—vegetation forthwith dies.

The creeks which separate and surround these islands, are from the nature of the soil, narrow and deep, with steep banks on both sides. The ruins of brick pagodas, and other buildings buried in the sand furnish evidence of the District having once been thickly peopled.

The whole Delta is liable to annual inundation from the overflowing of the Ganges in the rains. The District of Rajeshye, at the extreme north of the Delta, would be laid entirely under water, but for the river embankments maintained by Government for its protection at a great expense. The utility of these embankments, is more than questionable in an agricultural point of view. The accumulating sand and mud brought down by the river stream, which if allowed to spread over the country would have manured and fertilized the soil like that of

the Nile—is arrested by those embankments, and depositing itself upon their sloping sides has gradually raised the bed of the river above the level of the adjoining land.

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The embankments have been progressively elevated yearly to correspond with this rise of the river, and prevent its overflow. But this accident nevertheless very often happens from some part of the bank giving way, and then the violence of the inundation is terrible; hundreds of lives have been lost, and immense quantities of property destroyed. The erroneous principle which led to the original construction of these embankments has been followed by other evil consequences: the stagnant water which accumulates during the rains at the back of the banks, is prevented by them from draining off after the inundation of the river subsides. Uncharged like the waters of the river with foreign matters which by gradual deposition and accumulation might raise the level of the land it covers, it remains to be evaporated under the rays of the sun, injurious alike to the agriculture and health of the inhabitants.

Calcutta and the 24-Pergunnahs is not within the Gangetic inundation, but would be subject to tidal inundation, were not such prevented by innumerable bunds. These seem necessary to the rice cultivation, as the inundation would be saline, and injurious or destructive of it. A remarkable quality of the soil, and one sufficiently indicative of its extreme poverty is its peculiar tenacity being what is called a brick soil, chiefly siliceous, with a little clay and no lime. Instead of the water dispersed on it percolating through a looser and better soil, it lays in any hollow, natural or artificial, and disappears chiefly by evaporation, so that the whole country may be considered a marsh and fit at present for no other cultivation than the wretched and bad rice it now produces.

The Districts of Hooghly, Dacca, and Jessore to the east of Calcutta, where no bunding is practised and the *Churr* lands, or islands, in different parts of the river, beyond the influence of the tides, but annually overflowed by the river are the most fertile in Bengal. No sooner do the waters subside from the surface, than they are immediately cultivated, and probably from this cause these lands are never so unhealthy as those swampy rice-field tracts near Calcutta, or the marshes bordering the Salt Lakes.

Healthy vegetation is not a source of disease, and cultivation is universally a powerful auxiliary to sanitary operations. But rice cultivation is *sui generis*, and although a country may be salubrious where it exists extensively—such country is an exception, and must be so from some other powerful neutralizing cause.

Rice-growing in the 24-Pergunnahs is marsh-making. It is less so in Jessore, and within the influence of the inundation where water is allowed more liberty to come and go off.


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The silt or mud carried down by the Ganges has been analysed at different places with the view of ascertaining its fertilizing principle, the following is the result of Mr. Piddington's experiments at


Bansbarrah and Mohatpur.

Water,	2	
Saline matters (mostly muriate of potash,)	0½	0½
Vegetable matter destructible by heat,	4½	4½
Carbonate of lime,	12½	16½
Phosphate of lime,	0	1
Oxyde of iron,	12	12
Silex,	156	139
Alumine,	6½	14½
	<hr/>	
	193½	190½
Loss,.....	6½	9½
	<hr/>	
	200	200

The very unlooked-for circumstance of only 2½ per cent. of vegetable matter being found in these specimens appeared almost to exclude the idea that this was the fertilizing principle, or at least that it could be exclusively so; while on the other hand from 6 to 8 per cent. of calcarious matter appearing in them—when in an extensive series of analyses of the higher soils this was found remarkably deficient, pointed to the conclusion that the calcarious matter was perhaps the great agent. In regard to Indigo this was found by experiment to be the fact, for a minute portion of lime was found to encrease the produce upwards of 50 per cent.

The total absence of lime in the District, east and south of Calcutta, is therefore unquestionably an essential cause of the sterility and poverty of the soil, and the badness of the rice there produced, proverbially the worst in Bengal. It is farther deteriorated and exhausted by its annual *maceration* (for I call it nothing else) in fresh water; by the constant succession of the same crops, and the impossibility under such circumstances of manuring. In China the rice fields are sprinkled with lime water as soon as the plants have attained a little strength avowedly for the purpose of destroying insects which might otherwise prey on the young shoots, but its benefits I suspect are derived from its fertilizing principle.

Its use is considered by the Chinese so beneficial, that they hold the first inventor of this practice in the highest veneration. All round Calcutta the rice seed does not yield more than 6 to 1.


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The absolute quantity of mud carried down by the Ganges and discharged by it along the coast has been variously estimated. By Rennell it was said to be 1 part to 4 of water: the extravagance of which estimate has been forcibly shewn by Lyell—"even if it could be proved that the turbid waters of the Ganges contain *one part of mud in 100*, which is affirmed in regard to the Rhine, we should be brought to the extraordinary conclusion that there passes down every two days into the Bay of Bengal a mass about equal in weight to the great pyramid of Egypt," viz. 6,000,000 tons.

From observations made by the Revd. R. Everest at Ghazeepore in 1831, and repeated the following year during the rainy months, the total quantity of mud and sand discharged in one year is found to be about 6,368,077,440 cubic feet. Assuming the specific gravity of this mud to be half that of granite, and that 12½ cubic feet of granite are equal to one ton, this would give the annual discharge of mud equal to 127,661,588 tons, or about 22 times the weight of the great pyramid.

The soil of the 24-Pergunnahs is strongly impregnated with salt. Near Calcutta the surface soil is a light coloured sandy clay mixed with decayed and charred vegetable matter. At about 50 feet below the surface, this passes into a stratum of black peat about 2 feet in thickness. This stratum was found to occur at from 25 to 30 feet in the excavation of the Circular canal, and in the Entally canal it lay just below the bed, or 9 feet below the average level of the Salt Lake, and 5 feet below the present level of the Sea. The peat stratum has all the appearance of having been formed by the *debris* of Soonderbund vegetation, once on the surface of the Delta.

It appears from boring experiments recently conducted in Fort William that a stratum of sand occurs, generally above the peat clay, at a depth of 15 to 30 feet from the surface, from which the wells in the town are chiefly supplied with brackish water. Under the blue clays immediately subjacent to the peat stratum at from 50 to 70 feet nodular limestone concretions occur, sometimes in small grains like shells, sometimes in thin strata of great hardness. At 70 feet occurs a seam of loose red sand, which yields brackish water plentifully; from 75 to 125 feet a bed of yellow clay predominates, generally mixed with mica and sand, horizontal seams of nodular limestone run through it. Below 128 feet a more sandy yellow clay prevails, which gradually changes to a loose grey sand, extending to the lowest depth yet attained, and becoming coarser in quality until 176 feet. At this depth it may be termed a quartz gravel, containing angular fragments of quartz and flint such as are met with at the foot of a granitic range of hills.

The evidence of this gravel might tend to prove that the anger had here penetrated through the bed of alluvium of the Gangetic Delta, while the sandy nature

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of the undermost layers may be compared to the probable condition of the earlier deposits in the bay before they became covered by the lighter and more easily suspended particles of clay and vegetable matter.

The surface of the land on which Calcutta is built, and all south and east, slopes towards the Salt-water Lakes and is there considerably below high water mark of flood tides in the river. From the frequent irruptions of the sea through the Soonderburds ; much of the land in this direction is occasionally flooded by salt water, and the soil perhaps newly redeemed cleared of forest and jungle with much difficulty and beginning to be productive is again saturated with salt and becomes useless for at least two seasons, while the labor, the property and sometimes the lives of the unfortunate cultivators are sacrificed.

The most recent inundation of this sort happened in May, 1833, caused by a strong south east gale of wind, conjoining with a spring tide. During this gale the Barometer fell two inches. A tract of country, sixty-seven miles long and thirty broad, extending from the border of the Soonderbunds to Diamond Harbour, and within thirty miles of Calcutta, was overflowed with such rapidity that the inhabitants had scarcely time to make their escape, and many perished. The water did not drain off for eight or ten days, nor was any rice raised for eighteen months after. The effects of this visitation upon the health of Calcutta and its Suburbs will be detailed afterwards.

The banks of the river generally, as well as the ground near the sea, spring a little, and are higher than the adjoining inland plains. In some places an abrupt bank on one side of the river is opposed to a low shelving sand bank on the other.

The beautiful but pest-infected Suburb of Garden Reach may be said to be built upon a bund of the river rather than its bank.

The long narrow tongue of land occupied by its magnificent mansions is not half a mile broad, presenting to the river the abrupt slope of a canal, and rising perhaps 3 feet above the highest floods, while towards the landward it rapidly slopes immediately into a stagnant rice marsh, which extends for miles inwards over the country.

THE SOURCES OF AQUEOUS EXHALATION.

Those which are common to Calcutta and the country in its immediate vicinity may be said to be the *River*, the *Salt Lake*, and the *Circular Canal*, besides the annual rains and atmospheric conditions dependent on season.

THE RIVER.

The Ganges rising in the mountains of Thibet derives supplies from the whole southern face of the Himalayah range, and flows in a south easterly direction along the plain at their foot towards the Bay of Bengal

where it disembogues itself by a multitude of channels which intersect the great Indian Delta. Its length is estimated at 1500 miles. In its course it receives tributaries, each of which at certain seasons, swollen by the tropical rains, carries down with its stream a full proportion of earthy and vegetable detritus. Those rivers which issue from the western bank are more or less impregnated with lime—whereof the country between Hurdwar and Benares chiefly consists—while on the opposite bank the waters of the Jumna and Soane partake of a strong solution of nitre with which the plains of Oude, Fyzabad, and Ghazeepore abound. The rivers which fall into the Ganges between Patna and Baglipore are frequently tinged with copper. At about 200 miles from the sea the Ganges gives off its first branch the Bagarattee, which ere long unites with a second the Jellinghy to form what is afterwards called the Hooghly, the only navigable branch of the Ganges. The main stream continues its easterly and southerly course, unites with the Brahmaputra, flowing from Assam and Sylhet, forms 15 miles wide, interspersed with many islands, and falls with the sea about 180 miles east from the mouth of the Hooghly. The slope on which the Ganges descends, after issuing from the hills, is averaged at nine inches per mile in a straight line, but is not more than four, following its own course. The rate of its current in the dry season is less than three miles per hour. In the rains it increases to five, and within the influence of the tides it encreases to seven or eight. Like all tropical rivers destined to receive and carry away from the soil the periodical rains the Ganges at one season contracts into a shallow stream, its channels in some places dry up, or its waters accumulating in shallow pools are left to evaporate from a marshy surface. At another season increased by the influx of the higher streams swollen by the rains, it overflows its banks, and spreads its waters widely over the inland plains which are thus irrigated and prepared for cultivation.

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The Ganges begins to rise from the floods caused by the rains, and the melting of snow in the hills about the middle of May; but this does not affect the Hooghly till the middle of June, or 1st of July; when so great has been the accession of water that low water mark now is higher than the high water mark of the previous month. The river is at its greatest height about the 15th of August, when the current is so strong that ships at anchor off Calcutta, do not swing to the tide; after this it begins to fall, and for five or six weeks continues to do so at the rate of three or four inches daily. In October its daily fall is from two to one inches; from November till the end of April, the decrease is only half an inch per day.

During the height of the floods, such is the strength of the current, that its water flows nearly quite fresh, a distance of sixty miles into the Bay, and opposed there by no crossing current distributes slowly the sand and mud with which it is loaded, over shoals and banks which have existed for ages at the head of the Bay, and are adding daily to the coast.

The tide enters freely all the estuaries of Soonderbunds and flows when the river is low in the summer months nearly to the very head of the Delta. Owing however to the tortuosity of the channels it arrives at its high water point in these

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at very different times. Thus in the Salt Lake, not more than three miles from Calcutta, high water takes place later than at the latter place. The retardation of tide in the Hooghly from False Point to Calcutta, a distance in a straight line of not more than eighty miles, is nine hours in the dry season at full moon. At neap tides the tide current is still more retarded and counteracted—and in the rains.

The greatest mean tide at Calcutta from low to high water is fifteen feet ten inches, the smallest mean rise is three feet six inches.

From the point of lowest high water in March to that of high water in August is twenty feet ten inches, and the total range of the tide may be said to be twenty-five feet, which is little less than the height of Calcutta above the sea.

Bores occur in the Hooghly in the dry season at the highest or alternate spring tides. At Calcutta they sometimes rush up, causing an instantaneous rise in the river of five feet at the enormous rate of sixteen miles an hour.


The time of their appearance is predicted with certainty by the season of the year and the parallax of the moon. Their height, violence and direction upon one or other bank of the river depend solely upon the depth and shape of the channel.

Owing to the viscid tenacious nature of the soil of the Delta the smaller water courses which traverse it are generally narrow, and deep gutters with abrupt and almost perpendicular banks which are not often above the level of the country. In the Hooghly, however, as in the Ganges beyond the tide mark, one bank is generally abrupt and elevated, the opposite low and shelving. In the course of years and not unfrequently that of one season the deep water channel shifts from one side to the other, owing to any trifling accidental obstruction—and then the character of the opposite banks is speedily exchanged also.

This is strikingly the case at Calcutta. The river had formerly its deep channel along the western side at Howrah where now a low bank of sand and mud stretches out for nearly half a mile, and in a few years more will completely join the large sandy island just opposite the Fort called the Sumatra Sand—itself the production of the last forty years, and caused by the accidental sinking of a large vessel at the spot which bears its name. The gradual growth of this island and the approximation annually of the Howrah bank have thrown the deep channel entirely to the Calcutta side from the projecting angle at Howrah Ghat. Ships are now moored close along the Strand which was formerly a low sedgy bank, and plans are now in circulation for building regular quays along the Custom House for loading and unloading ships.

Under the flux and ebb of the tide, the banks on both sides are of course twice in twenty-four hours laid under water. The steep bank at low water presents a moist crumbling surface, sometimes undermined and with an overhanging craggy projection—the opposite bank is a low shelving slope of mud and mire

covered with vegeto-animal remains in all stages of putrefaction, and disengaging frequently the most abominable stench until the return of the tide. It is a remarkable fact, confirmed by ample observation, that a bank such as described, however filthy, if free from hollows which shall retain the water, and from vegetation which shall convert these into marshes, is no ways unhealthy, while the low plains adjoining the river which are but partially and occasionally laid under water, by river inundation, or the rains, and are not washed or drained by the tide present a stagnant surface to the rays of the sun which proves a fruitful generator of miasm.


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The second great source of aqueous exhalation perhaps the first in importance, is the Salt-water Lake, or Lakes about four miles south-east from Calcutta.

Not more than forty years ago the Salt Lake was much nearer to Calcutta than at present. At a village called Ramkissonpore, a mile from the high road leading to Dum-Dum, is a mound or tumulus of about thirty feet in height, surrounded by two venerable peepul trees, from either of which if ascended by help of a ladder, a magnificent view of the surrounding country and of the Lakes' whole expanse may be had. This mound which retains its native name of Dum-Dumma, not forty years ago, was on the edge of the Lake: it is said to have been raised by the Burmese or Mug traders who frequented the port and used to anchor their boats at this place. The Lake has now receded nearly a mile from its foot, and the whole circumference has been gradually contracting in a similar way for many years. The present area of both Lakes comprises a surface of about 17,000 acres, or about 26 square miles.

The western or proper Lake is traversed in a diagonal direction about five miles by a navigable channel in which the tidal current is rapid, and which contains from twelve to twenty feet of water. The average depth of the Lake however is not more than one and a half feet, the shallow level margins are scarcely ever completely drained of the tide, and the water there may be considered to be almost in a state of perfect stagnation. The parts adjacent to the navigable channel are better drained, and at low water in the hot season are often to be seen dry above the surface.

The water thus dispersed is entirely tidal being derived directly from the sea, by a deep and winding creek which runs from the most southerly point of the Lake, and connects itself with other Soonderbund canals.

The navigation along these channels and through the Lake is continued on to Calcutta by a canal which was excavated in 1810, from the margin of the Lake at Baliaghat, and terminates in a basin or *Cul de Sac* at the Suburb of Entally. This place, which was formerly of importance as being the principal port for the eastern inland navigation, has always been considered unhealthy and could scarcely indeed be otherwise, situated as it is upon the marshy edge of the Lake, and surrounded by dense low jungle, the natives dwelling there are subject to constant low fevers, spleen, dropsy, and mesenteric disease. To new comers a residence of even a few days is almost sure to be fatal.

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In 1803 or 1804 Marquis Wellesley directed a vigilant watch to be kept at Baliaghat for some French deserters who were supposed to have fled by water in that direction. A Police special guard of twelve men was sent out and stationed there: after four days it was reported to the Magistrate that all, but three of them, were dangerously ill, two were brought to Calcutta in the height of delirium with yellow bilious fever. The guard was relieved, and the following week, of the new guard all were attacked by the fever. In less than two weeks out of the twenty-four men, six died.

Whatever benefit the trade of Calcutta may have derived from the Entally canal it is alleged that the healthiness of the Town and Suburbs has been very materially affected by it. Mr. Blaquiere, one of the oldest Magistrates of Calcutta, tells me that previous to that time his villa and township at Boitacannah were perfectly salubrious, but that ever since, himself and all his people and neighbours have suffered repeatedly and constantly from bilious fevers and other endemic diseases. This he attributes distinctly to the opening up of this canal in the neighbourhood; the water in which is at all times nearly stagnant; the daily rise and fall of the tide being small in such a situation compared with that of the Hooghly, owing to the great length of course which it has to traverse in a straitened channel and the influence of the vast marsh itself in dissipating its force. Besides which the canal exhales at all hours abominable effluvia from the decomposition of unsold and unsaleable fish carried by that route to market, and from the heaps of filth and rubbish poured out by the town drains which empty themselves into it.

A considerable difference in point of level, and time of high water being found to subsist between the tides of the river and the Lake, it was suggested that advantage might be taken of this circumstance to connect them by a canal, which might bring the trading boats directly into the river at Calcutta, and be conducive to an improved system of town drainage. With this view the present Circular canal was begun in 1829, and completed in 1834. It commences from the river Hooghly immediately north of the Chitpore bridge, crosses the Barrackpore and Dum-Dum roads, then pursues a course parallel to the old Mahratta Ditch and the Circular Road, at an average distance of half a mile from the latter until it intersects the Baliaghat road, when after a slight curvature to the south-east, it falls into the Entally or Eastern canal formerly mentioned. Being provided with flood-gates and ebb-gates at its point of junction with the river it is protected from the violent influx of the river water in the freshes, and from the too great drainage which must occur at other times. A passage is available for the purposes of navigation for several hours during each day in the year and stagnation of water is obviated both in this canal and that of Entally by allowing a regulated flux and reflux of water from the river.

Owing however to some additional expense of tolls incurred by this route, and doubtless to the vexatious enforcement of unauthorized taxes by the native Officers employed, this channel is still but little frequented by native trading boats, and the more circuitous, difficult and dangerous but old, and established route of Tolly's Nullah is preferred by them.

This filthy gutter has its name from the Gentleman Major Tolly, who in 1775 constructed it with the design of opening a navigable communication between the river and the Salt Lake and Soonderbunds. Availing himself of a deep gully issuing from the south-east angle of the Lako and winding for some way in a westerly direction till within about ten miles of the river, and of a similarly irregular nullah rising from the river at Kidderpore just below Calcutta, he formed a cut across the intervening country, and gave passage at once to the trade.


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The banks of this filthy nullah are necessarily exposed to a daily variation of surface of from seven to fifteen feet under the influence of the tides, the depth is not sufficient to prevent a great portion of the bed being left entirely bare during the ebb tides of November to May : its length cannot be much less than twenty-five miles, although the direct distance it has to traverse is not ten. Passing through the populous Suburb of Kidderpore, Bhowanipore, and Allipore, this nullah receives all the drains from the neighbourhood, and in this situation being freely washed by the tide it contributes mainly to the comparative salubrity of this part of the Suburbs.

Encouragement having been held out by Government of long leases, within the last twenty years, much land has been redeemed from the margin of the Lakes.

Near Baliaghat an enterprising individual has established a Salt Manufacture by solar evaporation, and from his observation in one dry season he estimates the daily evaporation from the salt water of average condensation and specific gravity 1.072 to be 3-tenths of an inch which exceeds the estimates of fresh water evaporation made in the immediate neighbourhood of Calcutta.

The number of tanks, pools, and ponds in Bengal forms another striking feature in its Topography. They are so numerous that in the country every house or hut may be said to possess one or more. The mud from which the floor or walls have been constructed is hastily dug from the nearest possible spot of ground, and the excavation thus formed remains the receptacle of all the filth from the neighbouring dwelling till the next rainy season, when it is speedily filled with water and in its turn becomes the focus of disease, the generator and exhaler of pestilential miasm.

Besides such pools other and larger tanks are constructed for the purpose of bathing, and others for the supply of drinking water : the water contained in them is collected during the rains by draining from the neighbouring lands, but is also sometimes mixed with spring water, which is almost always brackish. This however is the only water in common use for drink and culinary purposes by the poor natives who cannot afford to remove their dwellings near to the few good tanks or small fresh water wheels to be found, and in fact the great proportion of village tanks are used alike for culinary, and other, even the filthiest purposes : many such tanks having been dug without any regular plan, are shallow, and are either soon choked up by aquatic plants or dry up every hot season and expose their muddy and filth-besmeared sides to the rays of the sun.

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Ostentation, the love of fame, or a religious vow often leads a wealthy Hindoo to construct a good tank, the perfection of which consists in its being dug of a square form with smoothly and steep sloping banks, through a firm soil, and in a place where no natural spring exists, or only one of approved sweetness. If sufficiently wealthy, the banks are then smoothly turfed or planted with short grass, a flight of steps paved and duly cleaned leads to the very bottom, and a brick wall surrounds the whole to exclude cattle.

Most of these tanks are private property, but the owner's enjoyment would be small were free access denied to any thirsty or pious passenger or neighbour.

The oldest tanks are always the best, as the mud precipitated forms a coating to the banks impervious to the springs from the salt strata, the water from a fresh dug tank is scarcely drinkable, and it is only in the course of several years that it becomes at all palatable.

An analysis of water from a new well near Calcutta gave in one pint the following ingredients :

	<i>Grains.</i>
Muriate of Soda,.....	8.42
Muriate of Magnesia,.....	1.03
Carbonate of Magnesia,.....	2.54
Clay, with perhaps a little silex,.....	1.44
	13.43

If we make allowance for the quantity of residuum lost, the whole extraneous matter in a pint of water will be 15.96 grains.

From this account of the climate and soil of the country surrounding Calcutta it will be seen that it abounds with every imaginable element of disease, and that these are in a perpetual state of active generation.

In fact it is a tract which could only have become peopled by agriculturists, in a country whose population pressed upon the means of subsistence, the price of labour is at least a fifth less than in the neighbouring Indigo districts.

THE POPULATION

Of the country round Calcutta is considerable: consisting chiefly of Bengalees who are all Hindoos. They are generally of slender forms, well proportioned

features, expanded chests and agile rather slight limbs. Their *constitution* like that of the inhabitants of all other intertropical and marshy climates partakes more of the lymphatic and phlegmatic temperaments than the sanguineous, predisposing them more to corpulence from laxity of cellular tissue and deposition of fat than robustness from growth of muscular fibre.

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Their **FOOD** though not nourishing is simple and abundant, consisting chiefly of vegetables and rice ; to which, according to the means of each, are added curry stuffs, fish, butter, milk, and sometimes the flesh of kids. Half a seer of rice, that is, rather more than 1lb. avoirdupois, is considered a sufficient daily sustenance for one person in a family, young or old ; and if to this can be added salt and oil with pulse or other vegetables and some curry powder, he is considered as living on full diet. The price of rice varies according to the season from eight annas to two rupees a maund. The only drink sanctioned by the Hindoo religion is pure water. Although a liquor called **TODDY**, the juice of various palm trees, is in universal use among all who can afford it—is very cheap, and when fresh, is not liable to any objection as an article of diet. It is nevertheless an error to suppose that there is not a large portion of the population of this country in a state of want and misery, and perhaps a larger proportion in this condition in the Twenty-four Pergunnahs to the southward of Calcutta than in more fertile districts. Just before the beginning of crop time annually, that is, in September or August, rice becomes very scarce and dear, and the means of subsistence scanty. All rice is considered unwholesome which is not a year old, but the first crop or August rice (**Ausdan**), a red grain of very inferior quality, the only grain which the soil of this district will produce, becomes the food of the labouring poor, and is a great source of disease. They have recourse to other esculents which supply in bulk what they want in nourishing materials—various species of **Arum**, the **Java Yams** which grows wild in every ditch, the stalks and seeds of the **Lotus**, **Singaree seeds**, &c. &c.

The **DRESS** of the wealthier classes consists of various pieces of white cotton cloth, wrapped loosely about the body not ungracefully. These are to be purchased at one rupee to eight according to their texture, and the dress of the women, which in no respect differs, is equally cheap and scanty. In the cold weather a chudder or blanket of coarse woollen stuff, or of **Europe broad-cloth**, is added by those who can afford it, but the poorer classes suffer intensely from the absence of any warm covering in the cold season and the rains.

Neither head dress nor shoes are ever to be seen, except in the families of the wealthy and the imitators of English habits.

The dwellings of the common people are either huts of bamboo and mats, thatched with long grass, or rice straw, or palm leaves, or the walls are of clay propped by posts, and hurdles of bamboo, and plastered with a mixture of clay, cowdung and straw.

The meanest huts are mere hovels, shaped like beehives of clay or palm leaves without any aperture save one doorway.


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All the dwellings, whether clay or mat, have the floor raised about a foot or 18 inches by clay—to remove them from the certain inundation they would otherwise be continually subject to from without: but in so damp a climate and so loose a soil such a method of protection from external moisture can scarcely be considered conducive to health.

Mud huts and thatched roofs are most esteemed, chiefly I believe on account of their greater durability, and greater warmth and comfort in the rains and cold weather: they must be at least as cool as others in the hot season, and I do not find that they are considered at all more unhealthy. The cost of a bamboo hut in the country is from 4 to 8 rupees, in town from 20 to 40 rupees, that of a properly constructed mud-walled hut of moderate size is from 40 to 80 rupees.

All who can afford it use CHARPOYS or small bedsteads of rope; but the great proportion of the working people have nothing but a mat and pillow to sleep upon, and these they spread during wet weather on the floor of their hut, or in the hot season in the verandah or porch made by the projecting thatch.

In their *habits* the Bengalees like other Hindoos, are remarkably cleanly.

The duty of bathing regularly once a day is enjoined by their religion and very generally adhered to. In their houses they are particularly clean: an observation which is always made by persons returning from the Upper Provinces.

The earliest duty of the housewife is to sweep the floor of her hut and polish the little verandah, and even the parts of the street opposite her house by plastering it with clay and cowdung, an operation which though not adding to the savouriness of the atmosphere, contributes I believe, very much to the healthiness of the dwelling.

The chief *fuel* used by the poor for culinary purposes is dried cowdung, and a great part of the labor of the women consists in collecting this and spreading it out in the sun to dry.

Of native habits injurious to health their treatment of parturient women and their infants occurs most forcibly to me.


Labour is generally conducted in the erect posture and is not considered complete until the expulsion of the placenta, which is effected by force, the quicker the better, and often followed by dreadful hemorrhage. *La nouvelle accouchée* is immediately subjected within closed doors, to a fumigation of pyroligneous acid from the combustion in her chamber of green wood: puerperal fever, tetanus and other diseases are frequent and fatal. The infant they never wash till the following day, and after it has been well spread out and dried in the sun.

In the disposal of their dead the method adopted by the Hindoos of burning the bodies, though a loss to agriculture, is preferable to all others for salubrity.

The poor who cannot purchase firewood for this purpose commit the bodies of their departed relations to the sacred stream.

Most of the *diseases* of the natives are those of asthenia or dejective vital energy. The flexibility of their constitution causes them to yield to the onsets of acute disease more readily than the European.

They suffer therefore more from the effects and sequelæ of inflammatory attacks than from such seizures themselves. The lymphatic system generally, and particularly the large glands, the liver, spleen, pancreas, and mesenteric glands seem to act in these cases as "*diverticula sanguinis*," and become themselves secondarily the seats of morbid reaction from the repeated or excessive distension and pressure put upon them in the early stages. It is thus that chronic visceral enlargements of spleen and mesenteric glands, chronic *diarrhœa* and dysentery are so common.


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All the fevers of Bengal have the character of periodicity essential to them, viz. that of remissions and exacerbations, a character which appertains only to those varieties and species of fever dependant on marsh miasmata as their remote cause—many other diseases (their sequelæ) partake or inherit this type.

Besides the endemic diseases the natives are of course subject to occasional epidemic invasions of cholera, fever, and dysentery in their acute form, but such occurrences, though always very fatal, are happily rare, and generally referable to some temporary or local cause, such as the inundation of the Twenty-four Pergunnahs by the sea in 1833.

From enquiries and copious reports furnished me by Mr. Patton I find that the loss of life on that occasion, though considerable at the time from the accident itself, occurred chiefly after the subsidence of the water. The whole district immediately south of Calcutta from Rannagore up to Simulbarea, and from thence to Saugor Island sixty-seven miles in length and thirty in breadth (not including Soonderbund) was laid under water so rapidly in the course of the gale of 20th May, and with such violence, that huts, cattle, agricultural implements, &c. were swept away, but most of the inhabitants were able to save themselves in trees or by floating on furniture or canoes. It was not until the 29th of that month and the beginning of June that the actual mortality from disease arose.

The fever which then appeared was of the most violent sort, like the yellow fever of the West Indies. The patients became speedily delirious and perfectly yellow: the spleen became large and abdomen swollen, and the decline of the first paroxysm was generally followed by intense prostration, *emaciation*, and fatal collapse.

Those who survived a second or third paroxysm escaped only with large spleens and dysenteries from which they did not recover for months.

As the higher parts of the district began to appear and the water drained off into the large marshy hollows near, those spots which had been fled to for shelter proved ultimately the most unhealthy. Families consisting of thirty to thirty-five individuals, were reduced to one and two by fever, or remained to die of spleen and dysentery, who had effected their retreat to the spot in perfect health.

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Of those native officers who were sent from Calcutta immediately after the calamity to report upon its extent and the means of alleviating it none were more fortunate.

After exposure to the malaria for ten or fifteen days they were forced to return with intermittent fever and spleen disease. They generally recovered but very slowly.

The effects of the inundation upon the European inhabitants of Calcutta, and particularly of Garden Reach, are accurately and minutely recorded by Mr. Twining in the Medical and Physical Society's Transactions for that year.

One of the most common diseases among the natives, and one distinctly referable to external causes is rheumatism. It seems to affect alike the plethoric and the weak, the young and the aged, although the latter are generally freest from disease. It is remarkable that although all the attributes of old age are prematurely developed in Bengal, this apparently brings with it the privilege of exemption from many of the prevalent diseases which affect the rest of the community, and about every village the number of decrepid old men, and women in a state of mental and bodily torpor, yet living on among troops of friends and relatives is very striking.

Women, infants and children appear to suffer most from the effects of the climate and privations. Unhappily the degrading religion of the Hindoo inculcates no better moral than fatalism, and considers females and infants, except the first born, as objects of much inferior consideration to a cow. Cutaneous diseases are very common of an herpetic character : of the exanthemata, with exception of small-pox, none are ever fatal or severe. Pulmonic and calculous diseases are more frequent than is generally supposed.

In medicine the Hindoos are Brunonians of the first order : they dread nothing so much as purgation and whatever tends to lessen vital action. Their "p,han-chans" or decoctions, or ptisans, are innumerable, but all tonic and excitant, and administered without reference to the periods of remission and exacerbation. The mineral medicines most in use among them are a sulphuret of mercury and white arsenic, which are sometimes employed with unquestionable and wonderful benefit, and as often with great and terrible evil consequences.

In feeling the pulse, a native Hukeem lays three fingers along the radial artery, if the vessel cannot be felt to throb with equal force upon the most distal as on the first finger, extreme danger is apprehended and recourse had forthwith to stronger p,han-chans, pills, and powders.

D. STEWART.

Calcutta, 28th July, 1836.

No. 1.

HINDOO MORTALITY FOR 1832.

	Number of Deaths reported from No. 2, Cossy Mitter's Ghaut.	Number of Deaths reported from No. 4, Nimtolah Ghaut.	Total.	Small Pox.	Cholera.	Various other Sickness.	How disposed.	
							Burnt.	Floated.
January,	455	352	807	0	84	723	460	347
February,	324	187	511	1	38	472	269	242
March,	362	266	628	12	166	450	346	282
April,	371	196	567	74	115	377	269	298
May,	410	262	672	99	132	441	351	321
June,	307	124	431	64	43	324	191	240
July,	319	193	512	57	75	380	271	241
August,	401	294	695	42	109	544	402	293
September, ...	416	320	736	30	111	595	454	282
October,	506	345	851	17	197	637	468	383
November,	513	420	933	34	121	778	506	427
December,	541	415	956	59	214	683	517	439
Total.	4925	3374	8,299	489	1405	6404	4504	3795

MAHOMEDAN MORTALITY FOR 1832.

	Manicktolla.	Cusseah Bang.	Total Number of Deaths.			
				Small Pox.	Cholera.	Various other Sickness.
January,	39	34	73	16	11	45
February,	20	40	60	17	6	37
March,	40	23	63	10	15	38
April,	28	42	70	2	6	62
May,	55	27	82	5	4	63
June,	30	50	80	8	11	61
July,	55	49	104	6	14	84
August,	44	20	64	0	36	28
September, ...	104	45	149	70	10	69
October,	60	40	100	30	10	60
November,	0	55	55	10	10	35
December,	59	50	109	16	24	69
Total.	534	475	1009	190	197	651

No. 2.

HINDOO MORTALITY FOR 1833.

	Number of Deaths reported from No. 2, Cossy Mitter's Ghaut.	Number of Deaths, reported from No. 4, Nimfollah Ghaut.	Total.	Small Pox.	Cholera.	Various other Sick- ness.	How disposed.	
							Burnt.	Floated.
January,.....	569	406	975	245	125	605	504	471
February,	537	400	937	353	124	510	505	482
March,	369	517	1386	612	308	466	667	719
April,.....	278	572	1450	587	381	480	726	724
May,	704	342	1052	277	352	423	516	536
June,	352	202	554	112	98	344	263	291
July,	372	350	722	32	264	426	430	298
August,	436	401	900	14	244	642	503	397
September, ...	643	771	1414	6	157	1251	916	498
October,.....	305	768	1573	10	251	1312	934	639
November,.....	1100	1013	2113	0	666	1477	1256	847
December,	1001	975	1976	1	577	1398	1196	780
Total for 1833	3382	6756	15138	2255	3517	9334	8416	6722
———— 1832	4925	3374	8299	489	1406	6404	4504	3795
Increase in 1833	3157	3382	6839	1766	2111	2930	3912	2927

MAHOMEDAN MORTALITY FOR 1833.

	Manicktollah.	Cusseah Baug.	Total number of Deaths.			
				Small Pox.	Cholera.	Various other Sickness.
January,.....	142	50	192	76	28	88
February,	133	50	183	55	46	82
March,	93	40	133	32	12	89
April,.....	223	37	260	49	83	123
May,	105	52	157	16	65	76
June,	24	45	129	7	13	109
July,	123	42	170	55	28	87
August,	103	80	188	0	40	148
September, ...	166	77	243	3	27	213
October,.....	168	47	215	0	46	169
November,.....	214	92	306	0	98	208
December,	116	93	209	0	38	171
Total for 1833	1680	705	2385	293	529	1563
———— 1832	534	475	1009	190	168	651
Increase in 1833	1146	230	1376	103	361	912

No. 3.

HINDOO MORTALITY FOR 1834.

	Number of Deaths reported from No. 2, Cossy Mitter's Ghaut.	Number of Deaths reported from No. 4, Nimtollah Ghaut.	Total	Small Pox.	Cholera.	Various other Sick- ness.	How Disposed.	
							Burnt.	Floated.
January,.....	557	415	972	0	94	878	512	460
February,	375	236	611	1	151	459	297	314
March,	400	334	734	3	279	452	389	345
April,.....	639	503	1142	12	521	609	628	514
May,	539	524	1063	6	576	481	634	429
June,	214	521	495	4	145	346	268	227
July,	384	398	782	1	50	731	480	302
August,	545	519	1064	0	51	1013	647	417
September, ...	471	377	848	0	56	792	506	342
October,.....	573	403	976	1	134	841	491	485
November,.....	739	659	1398	1	519	878	749	649
December,.....	624	458	1082	0	354	728	568	514
Total for 1834	6060	5407	11167	29	2930	8208	6169	4998
———— 1833	8382	6756	15138	2257	3547	9334	8416	6722
Decrease in 1834	2322	1349	3971	2228	617	1126	2247	1724

MAHOMEDAN MORTALITY FOR 1834.

	Manicktollah.	Cusseah Baug.	Total number of Deaths.			
				Small Pox.	Cholera.	Various other Sickness.
January,.....	63	33	96	0	23	73
February,	21	40	121	0	37	84
March,	99	58	157	0	66	91
April,.....	127	57	184	2	24	98
May,	136	97	233	0	147	26
June,	63	31	94	0	13	21
July,	134	42	176	5	13	158
August,	96	64	160	0	10	150
September, ...	90	45	135	0	1	134
October,	172	50	222	0	66	156
November,.....	133	33	166	0	54	112
December,.....	108	48	156	0	38	118
Total for 1834	1302	598	1900	7	552	1341
———— 1833	1680	705	2385	293	529	1563
Decrease in 1834	378	107	485	286	0	222

No. 4.

HINDOO MORTALITY FOR 1835.

	Number of Deaths reported from No. 2, Cossy Mitter's Ghaut.	Number of Deaths reported from No. 4, Nimtollah Ghaut.	Total.	Small Pox.	Cholera.	Various other Sick- ness.	How Disposed.	
							Burnt.	Floated.
January,.....	631	152	783	1	125	657	402	381
February,	538	0	538	2	107	429	267	271
March,	570	1	571	6	176	389	274	297
April,.....	439	75	514	11	88	415	230	284
May,	273	261	534	9	142	383	260	274
June,	165	257	422	6	35	381	202	220
July,	263	279	542	2	125	415	334	208
August,	231	256	487	0	70	417	293	194
September, ...	262	285	547	0	149	398	322	225
October,.....	332	321	653	0	162	491	378	275
November,.....	392	350	742	0	132	610	407	335
December,	281	259	540	0	45	495	287	253
Total for 1835	4377	2496	6873	37	1356	5180	3656	3217
———— 1834	6060	5107	11167	29	2930	8208	6169	4998
Decrease in 1835	1683	2611	4294	0	1574	2728	2513	1781

MAHOMEDAN MORTALITY FOR 1835.

	Manicktollah.	Cusseah Baug.	Total number of Deaths.			
				Small Pox.	Cholera.	Various other Sickness.
January,.....	62	22	84	0	8	76
February,	52	34	86	8	17	61
March,	64	48	112	0	37	75
April,.....	92	56	148	2	56	90
May,	93	46	139	2	48	89
June,	45	25	70	0	6	61
July,	54	33	91	4	4	83
August,	53	28	81	0	14	67
September, ...	89	40	129	0	41	88
October,.....	83	35	118	0	23	95
November,.....	62	66	128	0	23	105
December,	49	4	53	0	9	44
Total for 1835	802	437	1239	16	286	937
———— 1834	1302	598	1900	7	552	1341
Decrease in 1835	500	161	661	0	266	404

No. 5.

REGISTER OF HINDOO MORTALITY FOR FOUR YEARS.

	Number of Deaths reported from No. 2, Cossy Mitter's Ghaut.	Number of Deaths reported from No. 4, Nimtolla Ghaut.	Total	Small Pox.	Cholera.	Various other Sickness.	How Disposed.	
							Burnt.	Floated.
1832,	4925	3374	8299	489	1406	6404	4504	3795
1833,	8382	6756	15138	2257	3547	9334	8416	6722
1834,	6060	5107	11167	29	2930	8208	6169	4998
1835,	4377	2496	6873	37	1356	5480	3656	3217
Total, ...	23744	17733	41477	2812	9239	29426	22745	18732

REGISTER OF MAHOMEDAN MORTALITY FOR FOUR YEARS.

	Manicktolla.	Cusseah Baug.	Total Number of Deaths.			
				Small Pox.	Cholera.	Various other Sickness
1832,	534	475	1009	190	168	651
1833,	1680	705	2385	293	529	1563
1834,	1320	598	1900	7	552	1341
1835,	802	437	1239	16	286	937
Total, ...	4396	2215	6533	506	1535	4492

No. 6.

POPULATION RETURNS—CALCUTTA, 1832.

Names of Thannahs.	Puckah Houses.	Tiled Huts.	Straw Huts.	Residing in the Division.			Employed in the Division residing in another.		Employed in the Division residing out of Town.	
				Ryuts.	Proprietors.	Servants.	Ryuts.	Servants.	Ryuts.	Servants.
1 Sam Bazar,	313	365	1535	2493	1646	348	223	249	540	605
2 Baug Bazar,	526	129	1690	883	713	570	332	224	47	118
3 Shampookoor,	725	1196	4932	10516	2824	607	208	44	2538	1087
4 Churruckdunga,	335	614	743	2367	1482	389	329	228	244	209
5 Jorasanco,	348	593	321	2648	405	507	333	40	0	0
6 Symala,	1526	296	3208	1926	720	704	296	88	24	80
7 Sukea's Street,	532	360	2266	3899	2627	581	850	0	13	0
8 Puttuldunga,	1184	443	2379	5103	1650	427	1270	89	822	182
9 Thuntunesh,	228	571	1392	2975	2734	331	162	29	2699	345
10 Muchua Bazar,	208	1591	333	1103	2992	248	3423	182	554	16
11 Cullootolla,	346	505	152	1251	709	285	244	137	425	74
12 Chunam Gully,	135	570	36	1848	228	423	57	91	627	126
13 Mirzapore,	489	433	2379	5094	1620	412	1230	69	812	123
14 Mocheparrak,	273	260	1132	7789	1596	299	1241	127	154	169
15 Laul Bazar,	223	237	90	3460	211	946	603	281	820	517
16 Shibtrulla,	277	429	30	626	286	577	166	391	152	637
17 Gooreeahulla,	465	517	919	1169	1962	387	71	222	400	644
18 Puddopookoor,	1174	415	1290	2375	292	848	354	315	150	130

19	Chaundney Choke,...	338	806	278	1379	82	436	524	286	919	1254
20	Tautolla,	602	649	1038	4769	2331	1840	177	200	185	676
21	Jaun Bazar,	104	428	651	4991	105	1931	4102	1404	2364	812
22	Cullunga,	626	879	325	4177	1789	1616	267	495	198	255
24	Chowringee,	152	163	397	163	338	528	22	11	12	9
25	Short's Bazar,	68	265	957	630	649	418	0	211	26	127
26	Bamon Bustee,	88	15	543	330	344	1753	0	433	0	249
27	Coomortollee,	329	741	1101	980	340	60	313	56	728	381
28	Haukholla,	655	945	1269	1191	1441	228	132	12	2155	1644
29	Jora-Baug,	692	2175	699	2608	2001	1333	4101	610	2223	784
30	Cubberdunga,	378	512	122	610	365	147	152	258	460	960
31	Susteetullah,	458	699	102	2505	679	1100	63	562	70	129
32	Burra Bazar,	483	443	17	5902	1763	3433	666	665	169	37
34	Amratulla,	293	190	8	855	273	105	216	327	545	1307
35	Clive Street,	180	16	50	214	48	125	184	464	169	383
36	Laul Diggy,	249	77	19	365	283	843	375	1278	22	364
38	Larkins,	159	119	26	587	194	724	43	1172	30	2034
39	Chaundpaul,	91	7	5	225	2	0	2	1768	6	1558
40	Cooly Bazar,	31	766	0	186	580	580	0	0	580	580
		1528	19419	35425	89367	38004	26249	22751	13018	21882	18555

No. 7.

Register of Mortality among Natives for 4 Years; the Natives resident in Town being in 1832 = 187,081.

Years.	Hindoo.	Mussulmans.	Total.	Per Centage of Deaths or Ratio of Mortality.
1832	8299	1099	9308	4.97 or 1 in 20 nearly.
1833	15138	2385	17523	9.36 or ditto 10 ditto.
1834	11167	1900	13067	6.98 or ditto 14 ditto.
1835	6873	1239	8112	4.33 or ditto 23 ditto.
Average, ...				4)25.64
				6.41
Annual Mortality 1 in 15.6 nearly.				

No. 8.

Register of Christian (Protestants) Mortality for 10 Years; their number in 1822 being 13,138.

Years.	Children.	Adults.	Total.	Per Centage of Deaths or Ratio of Mortality.
1826	104	729	833	6.34 or 1 in 15 nearly.
1827	77	519	596	4.53 or ditto 22 ditto.
1828	111	408	519	3.95 or ditto 25 ditto.
1829	78	345	423	3.22 or ditto 31 ditto.
1830	62	456	518	3.94 or ditto 25 ditto.
1831	101	332	433	3.29 or ditto 30 ditto.
1832	89	385	474	3.607 or ditto 27 ditto.
1833	88	540	628	4.78 or ditto 21 ditto.
1834	71	394	465	3.539 or ditto 28 ditto.
1835	92	322	414	3. 15 or ditto 32 ditto.
				10)40.146
Average per Centage, ...				4.0146 or 1 in 25 nearly.

No. 9.

Table showing which Months are most fatal to Europeans (Protestants) in series of 10 Years.

	1826		1827		1828		1829		1830		1831		1832		1833		1834		1835		Total Children.	Total Adults.	Total of both.	Per Centage of Deaths or Ratio of Mortality.
	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A				
January,...	8	56	2	35	2	36	9	21	2	21	7	26	8	36	5	25	8	34	5	26	56	319	375	3.61 or 1 in 27.7
February,	7	32	5	28	2	30	2	16	4	13	2	15	7	15	6	23	6	9	9	16	50	197	247	1.88 ditto 53.1
March, ...	10	45	6	29	8	47	3	38	2	23	2	13	3	28	11	34	5	17	6	17	56	291	347	2.63 ditto 38.2
April,.....	13	75	9	42	10	60	12	24	2	23	9	30	6	17	8	37	5	24	9	22	83	414	497	3.78 ditto 26.4
May,	6	60	6	28	18	99	4	35	2	28	11	22	13	24	8	38	7	43	9	29	84	466	550	4.19 ditto 23.8
June,	12	52	3	34	11	30	10	23	3	32	8	19	11	34	15	35	11	28	9	25	93	312	405	3.097 ditto 32.2
July,	7	48	11	36	15	24	4	33	7	33	7	29	7	34	7	35	7	33	11	36	83	341	424	3.22 ditto 31.05
August, ...	11	65	9	39	14	26	9	30	8	17	13	24	3	40	6	55	9	60	11	36	93	392	485	3.68 ditto 27.1
September,	10	84	9	26	12	19	9	35	8	36	8	36	6	45	14	90	4	44	8	30	88	445	533	4.05 ditto 24.6
October,...	10	84	3	43	9	29	5	32	9	72	13	34	7	40	3	49	4	38	8	26	71	449	520	3.95 ditto 25.3
November,	5	37	5	48	7	27	8	28	8	82	12	43	9	36	3	61	3	37	1	29	61	426	487	3.76 ditto 26.5
December,	6	54	4	50	8	35	3	30	7	53	9	38	9	34	4	66	2	27	6	30	58	417	475	3.61 ditto 27.7
																					+ 876	*4470		3.45 or 1 in 28.95 average.

* $4470 \div + 876 = 5.09$, or the Mortality of Adults is greater than that of Children in proportion of somewhat more than 5 to 1.

No. 10.

Table showing which Months are most fatal to Catholics and the Comparative Mortality between Catholic Adults and Children for a series of 10 Years.

	1826		1827		1828		1829		1830		1831		1832		1833		1834		1835		Total Children.	Total Adults.
	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A	C	A		
January,	12	3	10	1	6	0	10	2	6	1	10	4	10	1	12	5	15	0	8	7	99	24
February,	11	1	4	0	11	2	5	1	3	3	9	5	8	2	15	4	10	0	8	0	84	18
March,	12	1	15	5	9	3	11	1	17	0	13	2	20	5	28	17	13	4	12	1	152	39
April,	12	2	27	10	14	2	11	2	7	1	11	0	18	8	21	3	9	11	11	1	141	40
May,	18	4	21	6	23	4	10	3	8	0	8	2	18	5	7	4	16	1	10	5	139	34
June,	14	1	14	3	11	4	11	1	3	0	7	0	16	2	13	0	12	3	8	1	109	15
July,	16	1	13	4	14	1	13	2	11	2	6	1	8	2	6	2	6	1	4	1	97	17
August,	15	2	11	2	11	1	20	2	3	2	6	0	10	1	11	2	13	5	14	0	114	17
September,	16	3	10	0	11	1	10	1	11	1	9	1	16	3	9	7	11	6	13	4	116	27
October,	7	2	15	4	10	1	8	1	10	2	9	1	17	1	9	1	8	4	6	3	99	20
November,	7	1	3	1	8	5	8	5	6	8	11	3	9	1	13	5	9	8	14	1	88	38
December,	8	0	10	3	18	0	7	2	14	2	13	3	17	3	15	4	21	4	9	0	132	21
																					* 1370	310+

* $1370 \div 310 = 4.41$, or the Mortality of Children is greater than that of Adults in the proportion of somewhat more than 4 to 1.

No. 11.

Table shewing which Months are most fatal to the Native population in a series of four Years.

	1832	1833	1834	1835	Total.	Per Centage of Deaths c Ratio of Mortality.
January,.....	880	1167	1068	867	3982	2.123 or 1 in 47 nearly.
February,	571	1170	732	624	3097	1.65 ditto 60 ditto.
March,	691	1519	891	683	3784	2.022 ditto 49 ditto.
April,.....	637	1710	1326	662	4335	2.31 ditto 43 ditto.
May,	754	1209	1296	673	3932	2.101 ditto 47 ditto.
June,	511	683	589	492	2275	1.21 ditto 83 ditto.
July,	616	898	958	633	3105	1.65 ditto 60 ditto.
August,	759	1088	1224	568	3639	1.94 ditto 51 ditto.
September, ...	885	1657	983	676	4201	2.245 ditto 44 ditto.
October,.....	951	1788	1198	771	4708	2.51 ditto 39 ditto.
November,.....	988	2449	1564	870	5871	3.13 ditto 31 ditto.
December,.....	1065	2185	1238	593	5081	2.71 ditto 36 ditto.

No. 12.

Statement exhibiting the number of Houses, Wells, and Tanks, in the Suburbs of Calcutta.

NAMES OF TANNAHS.	No. of Mehals.	Brick Houses of one Floor.	Brick Houses of two Floors.	Native Huts.	Native tiled Houses.	Native Brick Chucks.	No. of Wells Pucka.	No. of Wells Kutcha.	No. of Tanks and Ponds.	No. of Tanks with Ghauts.
Thannah Chitpoore,	33	752	310	9839	149	142	74	127	220	643
Do. Maniktullah,	42	110	208	16552	335	7	166	183	932	575
Do. Tauzeeraut,	84	1222	412	21348	154	179	265	71	1295	317
Do. Nowhazaree,	28	525	67	10111	193	133	159	6	821	183
Total, ...	187	2609	997	57850	831	461	664	387	3268	1718

No. 13.

Statement of the number of Inhabitants residing in the 4 Thannahs, the Suburbs of Calcutta.

Names of Thannas.	Resident Hindoo Adults.	Hindoo Children.	Resident Musalman Adults.	Musalman Children.	Native Lodgers or Passengers.	Christian Adults.	Christian Children.
Thannah Chitpore, ...	14177	5286	1627	601	875	76	8
Ditto Maniktullah, ...	20627	6173	13201	9661	3883	1290	190
Ditto Tauzeraut, ...	22032	5349	8601	2755	5072	99	42
Ditto Nowhazaree, ...	8465	2689	5845	2214	2818	113	68
	65301	19497	29274	15231	12648	*1578	+308
	29274	Total No of Native Children.*		19497			
	12648			34728			
Total No. of Native Adults,	107223*						

* $107223 \div +34728 = 3.08$, or the proportion of Native Children to Native Adults is as 1 to 3 nearly.

* $1578 \div +308 = 5.12$, or the proportion of Christian Children to Christian Adults is as 1 to 5 nearly.

No. 14.

Register of Strength and Mortality of European Corps in Fort William, for the years 1831, 1832, 1833, and 1834.

Years.	Corps.	Average Strength.	Period of residence in Fort William.	Total Deaths.	Ratio of Mortality to Strength per cent. per annum.
1831 {	H. M. 16th Regt. of Foot.	1145	Two Months.	11	5.32
	II. M. 3d ditto.	700	Ten ditto.	49	8.4
	II. M. 49th ditto.	715	Three ditto.	10	5.59
1832	II. M. 3d ditto.	793	Nine ditto.	46	7.73
1833	II. M. 49th ditto.	709	Twelve ditto.	50	7.89
1834	H. M. 49th ditto.	603	Ditto ditto.	54	8.95
					6/43.52
Average per Centage. ...					7.25

Annual Mortality 1 in $13\frac{1}{2}$ nearly.

Sir J. P. Grant's House, Saturday, 29th April, 1837.

CHARLES HUFFNAGLE, Esq. M. D. *Examined.*

Chas. Huffnagle, Esq.
before
Municipal Enquiry,
2d Sub-Committee,
29th April, 1837.

As to the advantage of the situation and construction of the city of Philadelphia.

Q. 1. What is the greatest heat of summer?—A. I have known Fahrenheit's Thermometer to stand at 96° on a hot day of July. But at night it is comparatively cool.

Q. 2. How long does the great heat last?—A. The hottest season is June, July, and part of August.

Q. 3. State the average temperature?—A. The average heat of May is about 65°, of June 74°, of July 78°, of August 73°, but the temperature of the weather is *very variable*.

Q. 4. Is the site of the town flat?—A. Not very. It is sufficiently high for draining into the river Delaware.

Q. 5. What contrivances have you for supplying water?—A. I think the salubrity of our city depends next to its construction, upon the ample supply of pure and wholesome water. The consumption of which in the summer months is about 3,000,000 gallons per diem.

Q. 6. How is this water distributed?—A. Reservoirs are constructed upon a mount, (in the vicinity of the city) partly natural and partly artificial, above the level of the houses. These reservoirs will contain a supply for at least ten days, and from these the water is conducted through cast iron pipes, extending nearly sixty miles all over the city. From the larger pipes it is conveyed into the houses by smaller ones.

Q. 7. From whence are the reservoirs supplied?—A. From the river Schuylkill, which flows at the base of the mount beforementioned.

Q. 8. By what means is the water conveyed into the reservoirs?—A. By water power—a dam having been constructed across the river to obtain a fall, and the water is propelled into the basins above by forcing pumps worked by large water wheels. There are two sets of this machinery, so that if one should be out of order the other may be instantly put into operation; and the whole only requires the attention of one man.

A great advantage is gained in case of fire from the force of the stream in the pipes. I have seen simply a leathern hose and branch pipe, attached to a fire

No. 14.
Chas. Huffnagle, Esq.,
before
Municipal Enquiry,
2d Sub-Committee,
29th April, 1837.

plug, throw the water as high as a third story, without any engine. This is also very advantageous in cleaning the streets, as the great force of the water removes all impurities.

Q. 9. Is the city cleaned by open kennels, or by sewers?—A. The city is constructed in squares. The streets crossing each other at right angles, these are divided into paved side walks and carriage ways. Under the streets there are sewers, and the water is conveyed into the sewers by open and very shallow gutters next the footways.

Q. 10. Do you know the fall in these sewers?—A. No.

Q. 11. Is the general level of the city much above the river?—A. Yes; Water Street, the lowest and next to the river Delaware; is still some feet above it.

Q. 12. Is there any part of the city or suburbs more crowded with houses, and less regular in construction?—A. Yes.

Q. 13. Have you made any observations upon the comparative salubrity of these parts?—A. Yes; the closely built and over crowded parts of the city have always been the site for epidemic diseases—and when these were prevalent, measures were taken to remove a portion of the population from these parts.

Q. 14. Have you found any good effects from such precautions?—A. Yes; very great. I believe that the effect in simply diminishing *panic*, by making the people aware that proper precautions were taken, was very beneficial.

Q. 15. Have you any means of forming an estimate of the expense of keeping up a supply of water?—A. No. But I believe the expense of completing the water works, &c. &c. now in operation, amounted to about a million and a half of dollars.

Q. 16. Is that sum expended or is there a profit?—A. There is a profit. The yearly revenue obtained for the use of the water is I think, over Sp. Drs. 60,000.

Q. 17. Do you know the expense of keeping the streets and kennels clean, or the number of men employed?—A. No.

Q. 18. Are there any men employed under ground in cleaning the sewers?—A. Not, that I am aware of.

Q. 19. Is there any source higher than the town from which a supply of water could be obtained?—A. There is not.

Q. 20. Do you remember a less perfect supply of water?—A. I do—when steam engines were used to force the water through the city—before the present works were constructed.

Q. 21. Was the supply of water deficient at that time?—A. It was not so profuse—liable to interruption and obtained at great expense.

Q. 22. Are you aware of the opinion of medical men as to the effect of the increased supply of water on the salubrity of the town?—A. Yes; medical men agree in considering it highly important.

Chas. Huffnagle, Esq.
before
Municipal Enquiry,
2d Sub-Committee,
29th April, 1837.

Q. 23. Do you consider Philadelphia a healthy city?—A. Very much so.

Q. 24. Are there any marshy places in the neighbourhood?—A. Yes. But not sufficiently near to affect the city.

Q. 25. Are there many inhabitants in these marshy places?—A. Not many.

Q. 26. Is the vicinity subject to intermittents?—A. Yes; they prevail within the range of marsh miasmata.

Q. 27. Do they prevail in the city?—A. Not so much now as formerly. In the Spring and Autumn, and at these seasons, they prevail throughout the country.

Q. 28. Are they generally prevalent?—A. Not in a great degree at Philadelphia—they occur in September and October.

Q. 29. In these months are a great many of the inhabitants subject to them?—A. I suppose about 5 per cent.; the congestions so very common here are not frequent, and spleen disease is rare in Philadelphia.

Q. 30. How are the markets cleaned?—A. They are thoroughly cleaned by water whenever required. The market houses are light and airy and situated along the middle of one of the widest streets in the city, and divided into numbers of stalls which are let to those persons who furnish the daily supplies. After market hours the ranges of stalls, &c. are thoroughly washed by persons in public employ.

Q. 31. Do you know the comparative state of the health of the city since these precautions have been taken?—A. Yellow fever has now I believe, disappeared, which I attribute to free ventilation and abundant supply of water for keeping the city clean. The original plan of the city was as I have mentioned, namely, hollow squares, but in such parts where this plan had been deviated from, and the houses were more crowded and thickly inhabited, the fever prevailed. I do not think I ever heard of a case having occurred in the better constructed and airy parts of the city. Since 1821, I think we have been quite free from yellow fever.

No. 13 A.

Capt. W. N. Forbes,
before
Municipal Enquiry,
2d Sub-Committee,
15th January, 1838.

No. 12 A.

Town Hall, Monday, 15th January, 1838.

CAPTAIN W. N. FORBES, *examined.*

Q. 27. The Committee are given to understand by evidence before them, that the state of the Suburbs of Calcutta, consisting of the villages along the banks of the Canal from Chitpore and round to Kyd's Dock-yard, viz. Chitpore, Nundenbagh, Behar Simlah, Komarparah, Sealdah, Entally, Ballygunge, Bhowaneepore, Kidderpore, is such, as to render them peculiarly unhealthy, and to generate miasmata, which spread their influence over every part of Calcutta and Chowringhee, the ground in these villages being generally irregular, affording lodgement of various extent for stagnant offensive waters, full of pits and half-dried tanks and the drainage every where defective.

In your evidence formerly given to the Committee you referred to a scheme for cleansing and draining, does the drainage proposed by that scheme go to such extent, and in such directions as effectually to drain the whole of the Suburbs above mentioned?—*A.* What I proposed was merely a skeleton like the laying down some of the great arteries of the drainage—with which drainage may be connected with sufficient falls. This will apply to the whole of Chitpore within the Circular Canal to Nundenbagh, to Behar Simlah, to Komarparah, to Sealdah, to Entally—not to Bhowaneepore or Kidderpore.

Q. 28. If not the whole what part of the Suburbs would be effectually drained by the sewers and drains proposed by that scheme, and what part would require additional drains for this purpose?—*A.* My scheme only comprises as I have said, the formation of main arteries—surface drains would be required, either new drains or the direction and slope of the existing drains altered to communicate with these arteries.

Q. 29. The object in the Suburbs being drainage merely, for which well constructed open drains, levelling and filling up pits and lodgements for stagnant water, would be sufficient, what in your apprehension would be the expense of the additional drains, levellings and fillings up required to prevent entirely the existence of stagnant water and damp and marshy ground producing noxious exhalation in the Suburbs abovementioned?

The Committee are aware that without an actual survey it is impossible to give an accurate answer to this question, they therefore only request from you a general answer giving as near an idea as your information enables you to form of the probable expense?—*A.* I am not prepared to answer this question. It would require an accurate survey of the ground. The surface drains must be lined with brick work in order to an effectual system of drainage.

Q. 30. What in your apprehension would be the expense of clearing away all belts of jungle and underwood, in and contiguous to the said Suburbs, which at present obstruct ventilation, saving always such belts beyond the said villages as may be interposed between them and more distant marshes, and lodgements of water affording a barricade to a certain extent, against the noxious exhalations there generated—the Committee propose this question under the same limitation with the last?—*A.* I think this ought to pay its own expense, or it might be done under regulation at the expense of the proprietors.

1835.
Capt. W. N. Forbes,
before
Municipal Enquiry,
2d Sub-Committee,
15th January, 1835.

Q. 31. Have you formed or can you easily form a calculation of the expense of the scheme you have suggested, or of the proportion it would bear to the plan delivered in to the Government by Captain Thomson?—*A.* I have not formed any such calculation, nor could I do it without much time and labour. It would require every part, and each detail of masonry and wood-work to be accurately calculated.

I reckon on a considerable compensation from opening the central channel to all descriptions of small boats (called Saltees) throughout the year—about 300 of which come to Calcutta every day and used to pay four annas each, which I am of opinion they would not grudge. There would be no impurities in the centre channel, which in the rains would be full with a current from the rain water falling, or when wished from the then high tide of the river, and in the dry season would always be filled at high water as a reservoir, with water as pure as that of the river or Salt Water Lake being used as a reservoir to scour the side drains which at that season would alone receive the filth, and would be arched over.

Q. 32. Could your scheme be readily combined with the formation of new and wide streets and tanks, such as are laid down in black dotted lines on the plan of the town of Calcutta by Lieutenant Abercrombie, and at what additional expense in your opinion?—*A.* It could be most readily combined with these new roads and tanks. The road proposed from Chitpore Canal Suspension Bridge to Park-Street at the end of Middleton Row would serve for the main central channel or canal and side drains. The tanks would be valuable extensions of the central reservoir. The excavation would be an additional expense.

Capt. W. N. Forbes' Answers to the additional Questions sent to him.

No. 12 B.

Q. 33. The Committee from your former evidence, and the sketch you have now presented, understand your general scheme to be as follows—

Capt. W. N. Forbes,
to
Municipal Enquiry,
2d Sub Committee,
19th January, 1835.

To cut a canal from the Salt-water Lake in a line nearly parallel to the Entally canal to the vicinity of the European burying ground in Park-street, or if Lieut. Abercrombie's plan for new and wide streets be adopted, the canal to be extended from thence in nearly the same line along Park-street to the end of Middleton Row, and thence in the middle of the proposed new Road, or Street to Chitpore canal Suspension Bridge, carrying the bottom of the canal all the way on a level $3\frac{1}{2}$ feet

No 12 A.
 Capt. W. N. Forbes,
 to
 Municipal Enquiry,
 2d Sub-Committee,
 15th January, 1838.

below the level of the highest surface of the Salt-water Lake, the sides being lined with brick work and the bottom rendered impervious to water by brick work or puddling, and on either side of the canal, a sewer or covered drain to be formed, arched, and the sides and bottoms formed of brick work, the side sewers having no communication with the canal at a less height than is necessary to obtain the greatest fall possible for the water in the canal to flow into the sewers, with a current for the purpose of scouring them—drains and arched tunnels for drying the ground on either side, and carrying away the filth, being constructed in lines east and west, emptying themselves into the sewers, the sewers and the canal, all serving to receive and carry off the water during the rains—the sewers *only* being employed for this purpose during the dry weather, the canal at that time being intended to act as a reservoir containing a head of water for scouring the sewers, to be supplied by the rise of the tide in the Salt-water Lake, and when necessary or desirable by the tides of the river through communications opened with it by proper sluices for this purpose. Is this a general description of your scheme, or in what particulars would you correct it?—*A.* Yes, this is a correct general description of the plan of drainage and sewerage, sketched in my evidence, and as the means of further explaining it I have commenced a section and perspective view of the canal (or reservoir and side sewers, under the supposition of their occupying the centre of the new north and south street, proposed by Lieut. Abercrombie, from the vicinity of the Chitpore canal Iron Suspension Bridge to the end of Middleton Row, or to some spot in the vicinity of Park-street, from which the canal and sewers would take a direct course to the Salt-water Lake nearly parallel to this Entally canal.

Q. 34. Could not one of the tanks proposed in Lieut. Abercrombie's plan, being formed on the margin of the canal about the centre of the native town, be employed with advantage as a sort of harbour or dock for native boats plying on the canal? Would this interfere with the sewerage? and might not a canal for boats with proper sluices or locks, be formed to communicate between this dock and the river with increased profit and advantage?—*A.* On further consideration, I think that the object of having convenient docks or harbours for the classes of boats which would navigate the *canal* could be best and most profitably effected by widening it *gradually* in the vicinity of the present large bazars (or in such places as bazars could most expediently be formed in) to *four or five times its average breadth*, as by this means the side sewers would be least diverted from the straight lines, which, for the purpose of having an effectual scour through them, it is desirable as nearly as possible to preserve. The line of the new street, and reservoir, or canal and sewers, might be carried through a number of the existing tanks and ponds, the waters of which are too impure for drinking or household purposes, and if many of these tanks or ponds are public property it would materially diminish the first cost of the ground—but even were they all private property they are obviously of little value compared with solid *well raised ground adapted for building on*. The *canal* would be so constructed as to communicate at one end with the river by small locks in the vicinity of Chitpore, and at the other with the Salt-water Lake, and thus formed it would *probably be entered daily*, from either end by 300 or 400 small boats, or saltees (the owners of which would willingly pay for each *4 annas per day**) carrying into every central part of the town, all descriptions of

* Making a total return of from 50,000 to 60,000 rupees per annum.

country produce, as also from the shipping in the river most varieties of imported goods, and as compared with the present means of transport, by bullocks and hackeries, or native carts, *it* would afford a safe and expeditious means of conveyance for both classes of commodities, *to or from*, the stores and great bazars which would early be erected along the roads formed parallel to it, it is probable that after a time it would be found profitable to open a direct *east and west channel* from some point on the river bank in the vicinity of the anchorage of the shipping to the central canal, but although such a channel would be useful, as affording the means of more speedily raising the level of the central canal or reservoir nearly to that of high water in the river (as thus raised it would afford a greater head or difference of level for keeping up a scour through the side sewers). I do not consider its construction, *in the first instance* essential to the scheme of drainage proposed; nor that until the system of central bazars had been established through the instrumentality of the terminal entrances adverted to, it would be advisable to undertake *its* formation.

Capt. W. N. Forbes,
to
Municipal Enquiry,
2d Sub-Committee,
15th January, 1838.

Q. 35. This tank would thus be rendered incapable of affording water for drinking and preparing food with, could not the other tanks be kept totally unconnected with the canal and be supplied with pure water from the rains, or the river during the rains?—A. The water in the canal or reservoir would be constantly available for watering the roads, as also for washing and bathing and for extinguishing fires, but save perhaps during three months in the middle of the rains, its communication with the Salt-water Lake would render it unserviceable for drinking or for preparing food. In fact the system of drainage and sewerage proposed would tend to preserve the purity of properly constructed *tanks of rain water*, solely reserved for drinking and household purposes, as it would provide the means of carrying off the impure water which under existing circumstances frequently find its way into tanks the water of which is used for these purposes.

W. N. FORBES,

Captain, Engineers.

Mint, January 19, 1838.

No. 12 C.

To the Hon'ble Sir John P. Grant.

No. 12 C.

Mint, January 29, 1838.

MY DEAR SIR JOHN GRANT,

I have the pleasure of enclosing the Estimate on the Plan proposed by me, and of returning Captain Thomson's and Lieut. Abercrombie's Plans, and the former's Estimate.

Your's very sincerely,

W. N. FORBES.

P. S. The Estimate has been prepared *in much haste*, and necessarily in the absence of the detailed working Plans on which it can be prepared with accuracy.

No. 12 D.

W. N. F.

No. 12 D.

Approximate Estimate of the expense of a Plan of drainage, and sewerage, proposed by W. N. Forbes, including a reservoir, serving as a canal for conveying

No. 18 A.
 Capt. W. N. Forbes,
 to
 Municipal Enquiry,
 2d Sub-Committee,
 29th January, 1838.

small boats to all the great bazars of the town, 28 feet broad at the top, and making a provision in the line of the canal, for four harbours, each 1000 feet long, and 104 feet broad, in situations in which new bazars could most conveniently and advantageously be formed. This reservoir affording the means of constantly keeping up an effective scouring current through large covered sewers, in part forming the sides of the canal, into which sewers the present drains, or new surface drains, will have an average fall of $11\frac{1}{2}$ feet in 2,000 yards. The sewers, as well as the reservoir, admitting of a current passing through them, (with a velocity of 6 miles per hour at high water in the river at spring tides throughout the year) towards the Saltwater Lake, and at low water in the river, in the dry months from the lake towards the river.

Co.'s Rs.

Masonry of main side sewers, arched over, and of the revetements of the canal, or reservoir, with that of the bottom of the canal, and that of aqueducts for conveying at the height of the rains fresh river water into tanks, (the manner in which the reservoir in Tank-square is now filled,) making a total transverse section, or area, of masonry of 170 square feet, which with a length of $3\frac{1}{2}$ miles, or 18,480 feet, will (at 13 Rupees per 100 cubic feet), Cost 408,408

Cost of excavating 36 furlongs or 23,760 feet in length, to an average transverse section of 800 square feet, at 2 Rs. per chowka, 52,148

Additional cost of excavating four harbours, 1000 feet long, and $38 \times 2 = 76$ feet broader than the average widths of the canal, making the total breadth of each harbour, 28 feet + 76 = 104 feet, 12,093

Cost of 30 trussed wood, or iron bridges, of 28 feet clear span, at 1,100 Rupees each, 33,000

Facing or lining with masonry, 21 running miles of drains, sloping into the main side sewers, 115,315

Cost of sluices at the river and lake, ends of the reservoir, and of other small sluices opening from it when filled into the main side sewers, 20,000

Small double locks for passing salties or small boats at the river and lake ends of the canal, 35,000

Total Co.'s Rs. 675,964

Add for contingent expenses on above 10 per cent. or on Co.'s Rs. 675,964, 67,596

Making grand total of Co.'s Rs. 743,560

W. N. FORBES,

Captain, Engineers.

If auxiliary to the above, an 80 horse power water lift Engine, (or two 40 horse power Engines) be employed, to raise water from near the Old Chitpore Bridge, into aqueducts running round by the town side of the Circular Canal, and along the Circular Road, as further along Clive Street and Esplanade Row, in aid of the aqueducts now connected with the Chandpaul Ghaut Engine, so as (in the dry months) to enable water to be successively thrown into the upper ends of the 21 miles of sloping drains (faced with masonry) above provided for, there will have to be added for the cost of Engine, Engine house, wells, pumps, erection, &c. &c. fit for work, 125,000

And for cost of 56 furlongs on 36,960 running feet of aqueducts, 45,000

180,000

And contingencies on above at 10 per cent. or on 180,000, 18,000

Making total cost of auxiliary (or Engine) Plan, Co.'s Rs. 198,000

W. N. F.

Mint, January 29, 1838.

No. 12 E.

To the Hon'ble Sir John P. Grant.

No. 12 E.

MY DEAR SIR JOHN GRANT,

The enclosed is the sketch of the Tontine Plan I have received from Mr. Curnin, whose first rate scientific knowledge on such subjects, makes his opinions of value. He will be happy to answer any further questions respecting it you may be inclined to propose, as also regarding the Engineering part of the business, which involves (in the completion of its details,) many calculations and problems in Hydraulics, that he could most easily make and efficiently deal with; and in fact I know no person who, either in raising the funds, or in carrying the plan into effect, could render more valuable assistance.

Your's very sincerely,

W. N. FORBES.

January 31, 1838.

No. 12 F.

To Captain W. N. Forbes.

No. 12 F.

MY DEAR FORBES,

With your plan for the draining and improving the City of Calcutta, I entirely concur. I knew not if it has occurred to you to form Wet-Docks, communicating with it into which all boats loaded or to be loaded could pass; by which means the canal would at all times be kept clear, and a

N^o. 12 A.

Capt. W. N. Forbes,
to
Municipal Enquiry,
2d Sub-Committee,
31st January, 1838.

greater surface of the most pestilential portion of the town improved. With respect to the chief difficulty in your undertaking—the ways and means—I humbly conceive if the influential leaders of society were to take the plan up and propose that the improvements contemplated by you, should be carried into effect by funds subscribed to a Tontine, that you would be enabled to accomplish what you propose within a short time and with complete success.

The nature of a Tontine is generally understood, but how to make it applicable and *palatable* to a collection of individuals is not so very easy or apparent. What I should propose is that all the subscribers to the Tontine should be classed, first as to the amount of their subscriptions, and secondly as to their ages. If you begin by requiring too heavy a subscription, you will exclude the greater portion of the public, I should therefore propose that the subscriptions should be for 100 Rs., 500 Rs. and 1000 Rs.; and that those subscribing for each of these sums should constitute a distinct class, say class A, class B, class C.

In each of these divisions those between 5 and 10 years should form one class,

11 and 15	ditto	ditto,
16 and 20	ditto	ditto,
21 and 25	ditto	ditto,
26 and 30	ditto	ditto,
31 and 35	ditto	ditto,
&c.	&c.	&c.

and to the surviving members of each class there should be given such portion of the rents, tolls, &c. as may be proportional to the capital subscribed originally by that class. When these classes shall have passed away the income which they had enjoyed, would become Municipal property, and might become a substitute for the Calcutta Lottery.

Whether in the formation of the classes, the European, or more properly speaking, the Christian subscribers, should form a distinct division, or whether they should mix with the Natives, I must leave to you and others to determine: but for my part I think the union would be advantageous to all.

I should propose that the collection of rents, tolls, and all dues of whatever kind, should be solely in the hands of the subscribers, and that the right to alter or improve or repair any portion of the work should also be vested in them.

I am not aware of its being necessary for me to say more on this subject, as the details will suggest themselves to you.

I am, my dear Forbes,

Your's faithfully,

JOHN CURNIN.

Calcutta, January 28, 1838.

(1801)

° MY DEAR SIR JOHN GRANT,

I feel much obliged by your having sent me the Evidence, and lithographed *plan*, of the proposed improvements of Calcutta, and on the *latter* I have had pleasure in marking in, the lines of drainage, and sewerage, adverted to in my former communication and estimate. Having, as you suggested, shown the main central channel in the line of the principal new street proposed by Lieut. Abercrombie, I have introduced, as you wished, the surface aqueduct, running through Clive Street, Court House Street ; and out to the end of the Chowringhee Road (which by the bye had best be covered over by long tiles placed one foot under the mean average level of the Streets) and the other aqueduct proceeding on the eastern side of the town, from the same spot, near the Chitpore Bridge, down the Circular Road to near the end of Park Street. I further have shown by arrows the directions of the scours through the open drains from these aqueducts to the main sewers, which (arched over) run along the sides of the central reservoir or canal. I also have dotted in, the line of drainage to which my first evidence referred, as calculated to show that it admits of being transferred to the new North and South Street.

The more I consider the matter, the more I feel convinced that the town could be fully supplied with good water, and be effectually drained and scoured by the plan proposed. The paper of the lithographed plan having become so soft and spongy, from having been often folded, as not to admit of the notes I have written on it being read, I attach a copy of them, and am very sincerely yours,

W. N. FORBES.

Chowringhee, May 26, 1838.

*Notes to the annexed Plans of Lieutenant W. Abercrombie and
Captain W. N. Forbes.*

1. The yellow coloured dotted lines denote the new line of Roads suggested by Lieutenant Abercrombie.

2. The blue coloured dotted lines forming oblong squares denote the sites for tanks proposed by Lieutenant Abercrombie.

3. The large red figures denote the levels marked by Lieut. Abercrombie.

ABC. Captain W. N. Forbes's lines for the excavation of a main central channel to be made subservient to draining the town of Calcutta shown running through the principal new street proposed by Lieutenant Abercrombie.

AEF. The line of drainage referred to in Captain Forbes's first Evidence.

The reddish blue lines indicate the surface (but covered) aqueduct for throwing water into the heads of the drains, to scour them down to the covered sewers conducted along the sides of the central channel Reservoir or Canal—runs from A along the town side of Clive Street, up in front of the Writers' Buildings, down Court House Street, and the Chowringhee Road; and the other similar aqueduct runs from A along the town side of the Circular Road to near the end of Park Street.

The drains of the ground between Clive Street, or Court House Street, and the river would be scoured down to the river by the aqueduct first described, and the drains of the surface between the Circular Road and Circular Canal would be scoured from the aqueduct in the Circular Road into the Circular Canal.

The arrows indicate the directions in which the scour will take place from the aqueducts to the central side sewers, themselves constantly scoured by the river, lake, or reservoir.

No. 9

Town Hall, Monday, 15th January, 1838.

J. R. MARTIN, Esq. *examined.*

SECOND DAY.

No. 9

Second Day.
J. R. Martin, Esq.
before
Municipal Enquiry,
2d Sub-Committee,
15th January, 1838.

Q. 7. Are you of opinion that the salubrity of the town would be improved by the opening of large streets and tanks, such as laid down by Lieut. Abercrombie on the plan of Calcutta in dotted lines?—*A.* I think it would be greatly improved by such means; by the mere ventilation it would be very much improved.

Q. 8. With regard to tanks, are you of opinion that such large tanks in openings of the town, kept clean, would generate miasmata?—*A.* No, but the contrary, by draining the surrounding land.

Q. 9. The Committee have understood that the presence of stagnant water, though itself pure, is a sufficient cause to excite the production of miasma from the surrounding soil?—*A.* That is true, but in the case of tanks the water is collected in mass, and separated from the soil by percolation; the effect of tank-making cannot therefore be otherwise than beneficial to public health.

Q. 10. Is any considerable depth a necessary condition of the salubrity of a public tank?—*A.* I think so. The deeper the better.

Q. 11. Are you of opinion that twenty feet would be a sufficient depth to secure the salubrity of a tank?—*A.* Yes.

Q. 12. If the tanks were permitted to form a sound bottom by the deposit of mud not disturbed by cleaning, are you of opinion that these deposits would injure the purity of the water?—*A.* Pure mud would not affect the quality of the water, but it generally happens that the mud is mixed up with vegetable matter so as very sensibly to injure the water, and it is this admixture that renders periodical cleansing necessary.

Q. 13. If tanks were puddled, in order to form a sound bottom, in your apprehension, would that prevent the water becoming impure from the causes you have mentioned?—*A.* In a great measure I think it would.

Q. 14. Would periodical cleansing answer the same purpose (of tanks not puddled)?—*A.* Yes.

Q. 15. Would it be necessary to prevent foul drains (carrying off the filth from houses) entering the tanks?—*A.* Quite necessary.

No. 9

Second Day.
J. R. Martin, Esq.
before
Municipal Enquiry,
2d Sub-Committee,
15th January, 1838.

Q. 16. Would it be necessary in order to the water being wholesome that the bottoms of the tanks should either by the deposit of mud or by puddling be rendered impervious to the brackish water percolating from the surrounding soil?—A. Yes, certainly when the water contained in the soil is brackish. In some places good water is obtainable both by wells and tanks.

Q. 17. If these tanks were supplied from the river, being formed in the manner that you have stated to be necessary, is it your opinion that the water would be wholesome, or are you of opinion that they ought only to be filled by rain water?—A. Rain water where procurable should always be preferred. It is the purest of the natural waters, but river water would also answer very well, taken at the proper season of the year and times of tide.

Q. 18. You have stated in the topographical account of Calcutta, with which you have favored the Committee, that the state of the Suburbs is such as to generate miasma to an extent extremely prejudicial to health. Are you of opinion that these *miasmata* extend, to affect the salubrity of Calcutta and Chowringhee?—A. So much so, that I believe no improvements which do not comprise the Suburbs will be at all effectual towards rendering the City of Calcutta and Chowringhee what they ought to be.

Q. 19. You have also stated the extreme insalubrity of the neighbourhood of the Saltwater Lake, are you of opinion that the miasma there generated extend their influence over Calcutta and Chowringhee?—A. Assuredly they do, though diluted in the common air, in proportion as the lake is further removed from us than the surrounding Suburbs.

Q. 20. Are you acquainted with a dense border of jungle or wood extending in the vicinity of the Saltwater Lake between it and Calcutta, and do you think that this operates as a barricade against the influence of the miasma there generated?—A. No, I am not acquainted with any that will form such a barrier. Forest trees, or trees of an umbrageous nature have that effect, but not underwood.

Q. 21. Are you acquainted with any such border, lying to the North East of the great jeel lying East of the Garden Reach road?—A. No, most of the trees are cocoanut or others, not of the character I have stated in my last answer.

Q. 22. Are you of opinion that the draining and clearing of the Suburbs, mentioned in your topographical report, so as to prevent the formation of miasma within their limits, and extending the same precaution to the neighbourhood of the Saltwater Lake would render Calcutta and Chowringhee free from the influence of miasma not generated within their own compass?—A. Yes, I believe it would, that is draining, clearing and levelling, and preserving them so.

Q. 23. Are you of opinion that there is any danger of generating miasma, from the having an open channel of water of such width as to form a canal for the smaller description of boats, running through the centre of the town of Calcutta and in the Saltwater Lake, forming a head of water, or reservoir for scouring the

sewers, and consequently having frequent falls and currents?—*A.* I do not think that such a work kept in good order could prove in the least injurious to public health, but quite the contrary.

Q. 24. Is it sufficient to prevent the occurrence of miasma that the surface be kept dry?—*A.* No, it is necessary to drain to a considerable depth in order to dry the soil. In illustration, I may mention the statement of the Inspector General Ferguson respecting the Army in Holland in 1795, and that where encamped on the same ground in 1801. During the first period the Army was healthy, but in the second it suffered dreadfully from remittent fever. The reason as stated by Dr. Ferguson, for the difference in health was, that in the first case the previous spring had been a dry one, and in the second a very wet one, so that the soil in this latter instance was saturated, and thus exhaled the noxious effluvia which poisoned the Army.

Q. 25. You are acquainted with the levels of Calcutta and its neighbourhood, are you of opinion they would admit of drainage to a sufficient depth to avoid the consequences you have just mentioned?—*A.* Yes, ample, many towns are well drained without such advantages of fall.

Q. 26. Are you of opinion that the Suburb of Allipore which you state to be considered a healthy locality, and you believe with justice considered more so than Calcutta, being better raised and drained, requires further improvement in drainage and levelling and clearing, in order to prevent the generation within that locality of miasma prejudicial to the health of Calcutta?—*A.* Yes, I think, with reference to both points, that it requires further improvement.

No. 9 A.

Statement shewing the number of Medical and Surgical Cases treated at the Native Hospital for the last four years, viz. 1833-4, 1834-5, 1835-6, 1836-7.

YEARS.	House Patients.			Out-door Patients.		Vaccinated.	Total.
	Medical.	Surgical.	Total.	Medical and Surgical.			
1833-4.....	557	344	901	81,982	393	82,676	
1834-5.....	583	440	1023	72,380	426	73,829	
1835-6.....	595	419	1014	75,281	401	76,696	
1836-7.....	598	358	956	75,680	410	77,046	
Total.....	2393	1561	3954	304,723	1630	310,247	

J. R. MARTIN, Surgeon.

Native Hospital, 22d February, 1838.

No. 9.

Second Day.

J. R. Martin, Esq.

**Municipal Enquiry,
2d Sub-Committee,
15th January, 1838.**

No. 9 A.

**J. R. Martin, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
22d February, 1838.**

No. 20

Fourth Day.
 Captain J. Thomson,
 before
 Municipal Enquiry,
 2d Sub-Committee,
 15th January, 1838.

No. 20

Town Hall, Monday, 15th January, 1838.

CAPTAIN J. THOMSON, *examined.*

FOURTH DAY.

Q. 17. The Committee are given to understand by evidence before them that the state of the Suburbs of Calcutta, consisting of the villages along the banks of the Canal from Chitpore and round to Kyd's Dock-yard, viz. Chitpore, Nundenbagh, Behar-Simlah, Komarparah, Sealdah, Entally, Ballygunge, Bhowaneepore, Kidderpore, is such, as to render them peculiarly unhealthy and to generate miasmata which spread their influence over every part of Calcutta and Chowringhee, the ground in these villages being generally irregular, affording lodgement of various extent, for stagnant offensive waters, full of pits and half dried tanks, and the drainage every where defective. In your evidence formerly given to the Committee you referred to a scheme sent in by you at the desire of the Chief Magistrate and forwarded to Government, does the drainage proposed by that scheme go to such extent and in such directions, as effectually to drain the whole of the Suburbs, abovementioned?—*A.* It included all the Suburbs within the Canal, not Ballygunge and Kidderpore—it did not include Allipore.

Q. 18. If not the whole, what part of the Suburbs would be effectually drained by the sewers and drains laid down in that scheme, and what part would require additional drains for this purpose?—*A.* The whole which I have mentioned certainly would be effectually drained by the sewers and drains laid down in that scheme.

Q. 19. The object in the Suburbs being drainage merely, for which well constructed, open drains, levelling and filling up pits, &c. lodgements for stagnant waters, would be sufficient, what in your apprehension would be the expense of the additional drains, levellings and fillings up required to prevent entirely the existence of stagnant water and damp and marshy ground, producing noxious exhalation in the Suburbs above mentioned? The Committee are aware that without an actual survey, it is impossible to give an accurate answer to this question, they therefore only request from you a general answer, giving as near an idea as your information enables you to form of the probable expense?—*A.* The surface drains in the Suburbs were not included—they would be formed at the same time as the roads and would not add to the expense of making roads. The estimate would be increased in proportion to the extent of road made.

Q. 20. What in your apprehension would be the expense of clearing away all belts of jungle and underwood in and contiguous to the said Suburbs, which at present obstruct ventilation, saving always such belts beyond the said villages as may be

interposed between them and more distant marshes and lodgements of water, affording a barricade to a certain extent against the noxious exhalations there generated? The Committee propose this question under the same limitation with the last?—*A.* I apprehend that this would fall within the regulation.

Q. 21. Could your plan (delivered in to the Government) be readily combined with the formation of new and wide streets and tanks such as are laid down in black dotted lines on the plan of the town of Calcutta by Lieutenant Abercrombie, or with those streets, and a smaller number of tanks of that size, without an increase of expense, or if not, with what increase and without a material decrease of the amount of ventilation, proposed by those first mentioned streets and tanks?—*A.* They have no reference to the surface, the scheme would neither facilitate nor interfere with improvements.

Q. 22. Have you seen the evidence of Captain Forbes regarding a plan proposed by him for forming main sewers for the purpose of cleansing and draining the city?—*A.* The plan for the formation of the main sewers I have—it is such a decided improvement on the plan proposed by me, that I should think it would supersede it—it will be a reduced expense with the exception of the purchase of houses and ground—in the masonry there will be a considerable saving.

No. 2 A.

*Captain J. Thomson's answers to the additional Questions sent to him
22d January, 1838.*

No. 2 A.

Q. 23. You have stated in your former evidence that, in the plan you gave in to Government for drainage and sewerage, the formation of tanks would be necessary in order get earth to fill up the hollows, but that the sum at which you estimated generally the expense of that plan, would only meet the expense of forming small tanks occasionally where the roads are low—of what size, upon the average are you of opinion these tanks would probably be—would they be numerous, and generally at what probable distance from each other, and of what average depth?—*A.* The object of tanks being to supply earth to raise the roads, they should be as small and numerous as possible. A small tank lined with masonry and puddled at bottom, or made water-tight with cement, could be made comparatively cheaper than a large tank with sloping sides, &c. that is, ten small tanks *rivettted* and puddled, would cost less than one large one holding the same quantity of water. The usual depth of tanks here, is 18 feet, the breadth of the slopes must be 45 feet and 90 feet square, is the smallest tank that can be made of this kind. The proportional cost of tanks of this description is as the 4th power, that is, a square tank having the side double that of another will cost eight times the money. Probably the proprietors of ground would not object to have small tanks of the above description made in their grounds, more particularly if it was a rule that no tanks of any other description would be permitted, on this probability the cost of ground would be saved.

Q. 24. The Committee understand you to have had the charge of superintending and collecting tolls from the small native boats which have daily resorted

No. 2
Fourth Day.
Captain J. Thomson,
before
Municipal Enquiry,
2d Sub-Committee,
16th January, 1838.

No. 2 A.
 Captain J. Thomson,
 to
 Municipal Enquiry,
 2d Sub-Committee,
 22d January, 1838.

to Calcutta by the canal, what toll was levied, what was the average number of those boats daily and what was the toll paid by each boat?—A. There were 770* small boats in December last came with small articles of produce for the daily supply of the bazar, these pay no toll now, but formerly paid 4 as. each. Of the 9,000 other description of boats about 5,000 paid less than a rupee each, or were of such size and description as would take advantage of any direct water communication with the centre of the city. The former collections from small boats at 4 annas each was about 7,000. Rs a year.

Q. 25. Supposing a canal dug from the Saltwater Lake nearly parallel to the Entally canal to the ends of Middleton Row and Free School Street in Park Street, and from thence to the Chitpore Suspension Bridge, over the Circular canal, of sufficient dimensions to admit the small native boats called saltees. Do you think it would be frequented by such boats, and in what probable number daily and what amount of toll would each boat easily afford to pay?—A. If four annas toll was taken from each boat and the average value of the produce brought by each boat was four rupees, that it would require about 5,000 boats a day to supply the markets, perhaps 1-10th of this number, or 500 boats, might be depended on, and probably a toll of two annas would give a larger return and be much greater public convenience. The principal traffic on the canals in China is manure prepared in a particular way, and it appears that the whole of the filth of the towns there is removed in this way to the great benefit of agriculture—on this subject there are some excellent observations of Mr. Martin (the painter) as applied to London.

Q. 26. If a large Basin or Dock were formed in the lowest part of the town, about the centre of the native town of 1,000 feet square, upon the line of the said canal, and a canal with proper sluice or locks were constructed between such Dock and the River Hooghly probably near the new Mint, do you think many such boats as are above mentioned would enter the Dock daily from the river, and would this in your opinion make any and what addition to the number of boats entering from the Saltwater Lake and to the toll that might be levied?—A. To dig such a Dock would cost 6,66,000 Rs. and the purchase of the ground from 16 to 24,00,000, which I consider an impracticable supposition. If any sewer or canal passed through a tank and the tide allowed to ebb and flow daily, the tank would be filled up in a year. 2,000 feet of canal would be a greater convenience to boats than the Dock 1,000 feet square.

Q. 27. What in your opinion ought to be the breadth and least depth at low water of canals intended for this purpose?—A. The saltee never draws more than 18 inches, and may be allowed to ground every tide without injury—the depth and breadth of the canal is not important.

* N. B —There is a number estimated at 1,500 saltees per month (in addition to the 770) of which no account is now taken.

To the Honorable Sir J. P. Grant.

MY DEAR SIR,

I cannot conceive the possibility of excavating a tank of the large dimensions proposed in the manner in which small tanks are dug. I can therefore only compare the cost of the work with similar ones executed in England where they can command all the assistance of machinery and railroads. The contract rate of such a work, there would be about 1s. 10d. the cube yard, but sometimes as high as 2s. 3d. and 2s. 6d.—there are 6,66,000 cube yards in the tank, nearly, which at one rupee gives the sum I mention on the supposition that 10,000 daily workmen can be arranged as economically as 100, and also that the consequences of bad weather and bad soil have been provided for. The following would be the cost of excavating and laying the earth on the banks,..... 1,20,000

Of removing the earth by hackeries, an average distance of 1000 yards,..... 1,50,000

I am, my dear Sir,

Your's truly,

J. THOMSON.

29th January, 1838.

Calculation of the contents of a tank, 1000 feet square at top, 900 at bottom, and 20 feet deep.

$$(1000+900)^2 - 1000 \times 900 \times 20 \times \frac{1}{3}$$

$$(1000 \times 900)^2 = 3610000$$

$$1000 \times 900 = 900000$$

$$\underline{2710000}$$

$$20$$

$$\underline{3)54200000}$$

$$\underline{27)18066667} \text{ cubic feet.}$$

$$\underline{669136} \text{ cubic yards.}$$

No. 2 C.

Capt. J. Thomson,
to
Municipal Enquiry,
2d Sub-Committee,
December, 1836.

*To Prosonno Comar Tagore, Esq. Secretary to the Sub-Committee for
Fever Hospital, &c.*

SIR,

In reply to your communication of the 21st instant, I have the honor to state that my time being wholly occupied by my public duties, I cannot give sufficient attention to plans for the drainage of Calcutta, to enable me to form a decided opinion on what may be the best general plan to recommend.

I have to beg the favor that it be distinctly understood that any plans proposed by me for cleansing or draining Calcutta, have been meant only as attempts at elucidating the usual modes of planning the sewerage and drainage of towns, and that I propose nothing that is original.

I have the honor further to remark that, in order that a comparative estimate of the cost of the various ways in which the town may be cleansed and drained, would occupy the whole time of an Engineer for 12 or 18 months, and his salary, expenses of surveying and levelling, would be at least 10,000 Rs.: but this consideration need in no way interrupt the labours of the Sub-Committee, because if they approve of a system of sewers, or surface drains, or of both, or of foot paths, or of paving, their recommendation must necessarily precede any expensive or tedious enquiry into the cost.

With reference to the 2d paragraph of your letter, I understand that my opinion is required on the advantages of the foundations made of rubble stone or gravel and cement, sometimes called concreta. This is a very good foundation in soft clay, but it is not suitable for a sandy soil. The materials are not procurable in Calcutta. There would be no difficulty or expense (extra) attending the construction of tunnel drains in a quicksand, provided the excavation could be made and kept dry, while the work was in progress.

I have the honor to be, Sir,

Your obedient Servant,

J. THOMSON, *Capt.*

Engineer.

December, 1836.

No. 1

Town Hall, 15th January, 1838.

LIEUTENANT W. ABERCROMBIE, *examined.*

EIGHTH DAY.

No. 1

Eighth Day.

Lt W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
15th January, 1838.

Q. 60. The Committee are given to understand by evidence before them, that the state of the Suburbs of Calcutta, consisting of the villages along the banks of the canal from Chitpore, and round to Kyd's Dock-yard, viz. Chitpore, Nundén-bagh, Behar-Simlah, Komarparrah, Sealdah, Entally, Ballygunge, Bhowanee-pore, Kidderpore, is such, as to render them peculiarly unhealthy and to generate miasmata which spread their influence over every part of Calcutta and Chowringhee—the ground in these villages being generally irregular, affording lodgement of various extent for stagnant offensive waters, full of pits and half dried tanks, and the drainage every where defective. In your evidence formerly given to the Committee you referred to a scheme sent in by Captain Thomson at the desire of the Chief Magistrate and forwarded to Government, which, as a plan to carry off the filth of the town as well as the water, you said you approved of in general. Does the drainage proposed by that scheme go to such extent, and in such directions as effectually to drain the whole of the Suburbs above mentioned?—A. I am very little acquainted with the Suburbs and am unable to give any satisfactory evidence as to their state. Capt. Thomson's plan would drain the whole of them, except Ballygunge, Kidderpore, and those North of the Circular Canal, proper surface drainage being provided.

Q. 61. You have furnished the Committee with a plan for certain new broad streets and large tanks laid down in dotted lines upon the plan of the Town of Calcutta, Captain Thomson's plan is stated by him not to embrace the formation of large tanks, but only of such smaller tanks as to be necessary to complete the drainage and levelling—could Captain Thomson's plan in your opinion be combined with your plan for new broad streets with the same, or a smaller number of tanks of those dimensions, without an increase of expense, or if not, with what increase, and without a material decrease of ventilation?—A. I consider Captain Thomson's plan as a plan of drainage complete; it would not prevent or facilitate the opening of streets; it might raise a question as to the forming tunnels under such streets, in preference to those under former streets. As to the tanks, the large tanks are not absolutely necessary; a greater number of small tanks would do: Captain Thomson's plan is merely for draining; mine merely for streets and tanks; the expense of one would not affect the other. Capt. Thomson's tanks would not answer the purpose proposed by mine. Mine would probably more than supply the quantity of earth required in the plan given by Captain Thomson.

It would occasion an increased expense in carriage of earth, the excavation would be at the same rate, if of the same depth.

No. 1

Eighth Day.

Lt. W. Abercrombie,
before
Municipal Enquiry,
2d Sub-Committee,
15th January, 1838.

The difference of expense is the carriage of earth, which is very expensive, say 8 annas per 100 cubic feet on an average.

Q. 62. Have you seen the evidence of Captain Forbes regarding a plan proposed by him for forming main sewers for the purpose of cleansing and draining the city?—A. I have now seen it. It appears to be superior to Captain Thomson's inasmuch as it is simpler and provides for a return—I think it would be a cheaper plan than Captain Thomson's, and quite as effectual. It is adapted either to a surface drainage or covered system, but it does not go into details or provide for carrying the filth into the main channel.

NOTE.—Lieut W. Abercrombie desires to correct a part of his evidence on 19th November, 1836, (printed evidence page 64) in answer to question 52, wherein he has stated that the ground near Amherst Street is worth about 70 rupees per cottah, and near the river in the European part of the town 3000 per cottah. He says the extremes are 40 and 1000, or in some few places, such as the Government property, 1,500.

Referring to his evidence of 12th September 1836, he states that in the last rains he collected several specimens of water from drains in different parts of the town, and sent them to Dr. O'Shaughnessy, who has promised to analyze them. The tank under Hastings' Thanna, and another in Theatre Road, at the West end of the Pauch Koter, were filled from the drains of the last rains, and their water is used by the neighbourhood. He says, the Committee will form a better opinion of the water thus obtainable by examining what is actually in these tanks than by any oral evidence; he thinks most decidedly that all tanks the water of which is not generally used for drinking, should be filled from the drains, that in seasons of drought, their water might be available: no person need use it, who objected to it. A channel communicating with a drain, might be easily converted into a communication with the aqueduct, where the latter was carried on so as to approach the tank.

Referring to his reply to question 27, of 17th September 1836, he further states, that the Bye-Law does not prevent the removal of spouts after any period. Spouts, injuring the roads, are nevertheless common in the town.

W. ABERCROMBIE.

19th January, 1837.

No. 1 A.

To the Hon'ble Sir J. P. Grant.

Lt. W. Abercrombie,
to
Municipal Enquiry,
2d Sub-Committee,
24th January, 1838.

MY DEAR SIR,

A tank 1000 feet square at top, 20 feet deep, and having its sides at a slope of 4 in 1, contains 17,312,000 cubic feet, and the excavation at 4 rupees per 700 cubic feet, will cost 98,925 rupees, or for six similar tanks, 5,93,550 rupees: a similar tank with slope of 3 in 1, contains 17,888,000 cubic feet, and at the same rate, is excavated at an expense of 1,02,220 rupees, or six tanks at 6,13,320 rupees: a space of ground 1200=1060 feet, to allow for walks, green and balustrade, will cost at 50 rupees per cottah, 88,333 rupees; such a space of ground containing 1766 cottahs, could, if covered with Native huts, be cleared at an expense of 5,298 rupees at 3 rupees per cottah: supposing a cottah to contain six huts at five rupees per hut, the compensation at 30 rupees per cottah, would amount to 52,980 rupees.

In this I have given all my data, and have no objection to the calculations being submitted to the scrutiny of a third party.

Your's sincerely,

Calcutta, 24th January, 1838.

W. ABERCROMBIE.

To the Hon'ble Sir J. P. Grant.

No. 1 B.

Lt. W. Abercrombie,
to
Municipal Enquiry,
2d Sub-Committee,
1st February, 1838.

MY DEAR SIR,

I have the pleasure to reply to your note of yesterday. My former evidence states that the new streets marked on the Map sent by me to the Committee, are eleven miles in length, and that the expence of forming new roads will amount to about 20,000 rupees per mile. Their whole expence of construction will consequently amount to 2,20,000 rupees, including preparation of ground for the reception of metal, after it has been cleared of all obstructions, but exclusive of the expence of ramming, rolling and superintendence, which will be provided by the regular establishment.

The roads along Forbes' canal will require no drains on the canal side.

In my former evidence I stated the expence of surface drains to be about 5,000 rupees per mile, and this is correct as far as the drains themselves are concerned : to provide however for entrance bridges to houses in populous districts, I would increase the estimate to one rupee four annas per running foot on each side of a road : eleven miles of surface drainage, will therefore cost 72,600 rupees.

I see no other method of estimating the expence of filling hollows, consequent on the excavation of the canal, than the following :

Cartage of excavated earth, 1,90,08,000 cubic feet at 1 rupee per 100 cubic feet,.....	Rs. 1,90,080
--	--------------

Spreading and levelling, allowing 12 cubic feet per cart load, and 1 cooly at 2 annas per 4 cart loads,	49,500
---	--------

Total Company's Rupees.....	2,39,580
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The expence of excavating docks, I see that Forbes has given in his estimate : I have also learnt from him that he has framed an estimate of the expence of excavating and building pucca tanks, under the roads alongside the main canal and sewers.

Trusting that the above estimates will be found satisfactory.

Believe me, my dear Sir,

Your's very truly,

W. ABERCROMBIE.

1 No. 1 C.

Lt. W. Abercrombie,
to
Municipal Enquiry,
2d Sub-Committee,
25th August, 1837.

W. C. Hurry, Esq. Secretary Municipal Committee.

SIR,

One of the ends held in view by the Municipal Committee, being the best means of keeping the Streets of the Town free from obstruction and incumbrance, I beg leave to request their attention to the present inefficient system of licence provided by the Bye-Laws, for the erection of scaffolding and deposit of building material.

If necessary I could give oral evidence on the subject more conveniently than in writing, but it may probably be sufficient to state that it appears to me that persons obtaining licence to deposit materials on the road within a certain space, should be obliged to erect an enclosure capable of retaining the materials within that space: the Committee must be well aware that no such obligation has not practical effect at present.

I have the honor to be, Sir,

Your most obedient Servant,

W. ABERCROMBIE,

Superintendent of Roads.

Calcutta, 25th August, 1837.

No. 3

Sir J. P. Grant's Chambers.

Wednesday, 17th January, 1838.

No. 3

Third Day,
Rustomjee Cowasjee,
before
Municipal Enquiry,
2d Sub-Committee,
17th January, 1838.

RUSTOMJEE COWASJEE, Esq. *examined.*

THIRD DAY.

Q. 1. Do you consider the estimate of Lieut. Abercrombie, 4 Rupees per chowka for digging tanks, an over estimate, including the expense of sloping and turfing the sides, and forming walls round them, and enclosing with wall and balustrades, or what do you consider a just estimate?—A. The depth of the proposed tanks being only 20 feet, I am of opinion that the highest cost of digging would be 3 Rupees per chowka, including the sloping and turfing the sides of the Tank, and carrying the earth to a distance of 60 feet; for digging a common tank we pay 1-12 for the first chowka in depth, 2-6 for the second, and 2-12 or 2-14 for the third. Forming walks and enclosing with walls and balustrades would be a separate expense. The bricks for the wall might be made of the earth excavated which would cost less than half the price of bought bricks. But I think that 4 Rupees per chowka of excavated earth, would not cover the expense of digging, sloping, turfing and enclosing in the manner mentioned. I think 20 feet would not be depth sufficient for such large tanks. In my opinion they would require a depth of 30 feet in the middle. I think a less depth would not be sufficient to contain water enough to last for 8 months. I have made a good many tanks in different places in my own ground, in Calcutta, and consequently have considerable experience in this matter.

Q. 2. At what price per biggah or cottah could land be bought now, at the average, on the lines of the several projected new broad Streets, marked by Mr. Abercrombie on a plan of Calcutta; viz.

I. From Loudon Street, in continuation of it cross Durrumtollah to end of St. James' Street, and in continuation of Anherst Street to Upper Circular Road.

II. From Park Street at the end of Free School Street, in a straight line to the Bridge over the Circular Canal, next the river at Rajah Rajkissen's Ghaut.

III. From the end of Chowringhee Road at Durrumtollah Street, in a straight line to the River near Bagh Bazar at Kalaram Paul's Ghaut.

IV. Along the River side from end of Strand Road at Dhurmatolah Ghaut, to where it will meet the new road to the Chitpore Bridge, next the river at Soor's Bazar.

No. 3

Third Day,
Rustumjee Cowasjee,
before
Municipal Enquiry,
2d Sub-Committee,
17th January, 1838.

V. From the end of Soba Bazar in Chitpore Road, in a straight line in continuation of Soba Bazar to Upper Circular Road, where it will meet the proposed continuation of Amherst Street.

VI. From Tank-square opposite Old Court House Street, in a straight line nearly parallel to the projected new line of Chitpore Road (No. III above mentioned) to Soba Bazar.

VII. From Upper Circular Road at the end of Manicktola Road, in the same line with Manicktola Road and in continuation of it to where the last mentioned Road (No. VI) will cross Nimtollah Street.

VIII. From the back of the New Mint, in a straight line out of Clive Street, and at right angles to it to the corner of the late Petty Court Jail in Machooa Bazar Street?—*A.* I am not able to answer this question without personally examining the ground. But I am very ready to attend Mr. Abercrombie if the Committee desire it, and if he will point out to me upon the spot, the precise ground which it would be necessary to purchase for making the proposed roads, I think I shall be able to inform the Committee very nearly of the present value of the ground.

Q. 3. Supposing an Act passed compelling the proprietors of land in the direction of the above lines of Road to sell to the Government at the present market value such land as might be required for the proposed new Roads, and that the Government should buy 70 feet broad for the roads, and 60 or 70 feet on each side of those 70 feet with the view of selling the two side slips of 60 or 70 feet, at what rate per biggah or cottah do you think these improved frontages, due provision being made by Law against encroachments on the frontage, could be sold for building on or if thought better to let them on long building leases, what yearly ground rent, do you think might be obtained for them?—*A.* I think the improved frontages here mentioned would fetch 50 per cent. more than Government would pay for them. Supposing the frontages to occupy about 2-3ds, and the road about 1-3d of the ground purchased, the frontages at this rate would sell for as much as the whole ground purchased would cost. In some places they would fetch more than 50 per cent. additional, in others less. On the extended line of the Strand Road to Chitpore Bridge. On the line of the Chitpore Road and in the Burra Bazar the frontages would in my opinion pay the cost of the whole ground to be purchased, except where it was covered with very valuable buildings, as to which it is impossible to form an accurate judgment. In places further from the centre of the town and the great resort of business the improved frontages would probably not fetch more than 25 per cent. additional on the original cost, but the outlay in the purchase in these situations would be proportionally small. I think if let upon building leases their frontages in the best parts of the town would let for 12 per cent. per annum, and probably more, upon the sums for which they could be sold.

Q. 4. Supposing the sum necessary to carry the improvements projected into effect to amount to 20 lacks, or from that to 25 lacks, the interest of that sum to be secured on taxes to be laid on the proprietors and wealthier inhabitants at an

increase of the house and land tax. Taxes on carriages and horses, &c. as at Bombay for local purposes, the sum to be raised on loan in the course of 5 years, which it would take to complete the improvements, could that sum be raised by loan on such security without further guarantee of the Government than the imposition of the taxes until the loan should be paid off, and at what rate of interest. Could such loan be raised on such taxes with the guarantee of the Government, and at what rate of interest?—*A.* I am of opinion that no money could be raised on the security of taxes without the guarantee of the Government. I think that, with that guarantee the sum of 20 or 25 lacks might be easily raised by loan, in any time that might be wished, at 5 per cent. interest, provided the principal be not made payable in less than five years. If not made payable until a later period it might be raised with the more ease but not at a lower rate of interest than 5 per cent. I think a moderate tax upon all carriages, caranchees and carts, without increasing the house and land tax, would repay a loan of twenty-five lacks, with interest at 5 per cent. in from twelve to fifteen years.

No. 3.
Third Day,
Rustomjee Cowasjee,
before
Municipal Enquiry,
2d Sub-Committee,
17th January, 1838.

Q 5. Do you know at what rate the Lottery Committee bought and sold land, and whether with a profit or a loss, and do you think times are materially changed in this respect or that the management of the Lottery Committee was defective and might be improved as to purchases and sales?—*A.* I have no information upon the purchases and sales of the Lottery Committee.

Baboo Dwarkanauth Tagore's Answers to the Queries that were put to Rustomjee Cowasjee, Esq.

No. 15.
Baboo Dwarkanauth
Tagore,
to
Municipal Enquiry,
2d Sub-Committee,
22d January, 1838.

MY DEAR SIR,

I have carefully read over the replies of Rustomjee to the queries, and am happy to join him in the statement made by him, so much so, that it supercedes the necessity of a separate answer from me.

In the commencement of the 3d query, you contemplate a legislative act compelling the land owners to sell to the Government at the market price such land as might be required for public roads, I have the pleasure to notice that there is such Regulation now in operation; viz. VI., VII. and VIII. Clauses of the Rules and Regulation passed by the Government, dated 28th October, 1811. and duly registered in the Supreme Court, and that for Muffusil, Regulation I. of 1824 provides.

Your's very sincerely,

DWARKANAUTH TAGORE.

22d January, 1838.

No. 13 A.

D. Stewart, Esq.,
to
Municipal Enquiry,
2d Sub-Committee,
January, 1838.

No. 13 A.

January, 1838.

Duncan Stewart, Esquire's Answers to the Questions that were sent to him on the 20th January, 1838.

Q. 1. Are you of opinion that the salubrity of the town would be improved by the opening of large Streets and Tanks, such as laid down by Lt. Abercrombie in dotted lines on the Plan of Calcutta delivered in to the Committee; the Streets being proposed to be 60 or 70 feet wide, and in the directions following: viz.

I. From London Street in continuation of it in a right line across Dhurumtolla to the end of St. James's Street, and in continuation of Amherst Street to the Upper Circular Road.

II. From Park Street at the end of Free School Street in a straight line to the Bridge, over the Circular Canal next the River at Raja Rajkissen's Ghaut.

III. From the end of Chowringhee Road at Dhurumtolla Street in a straight line to the River near Bagh Bazar at Kalaram Paul's Ghaut.

IV. Along the River side from the end of the Strand Road at Durmatola Ghaut to where it will meet the new Road, to the Chitpore Bridge next the River at Soor's Bazar.

V. From the end of Sobha Bazar in Chitpore Road in a straight line in continuation of Sobha Bazar to the Upper Circular Road, where it will meet the proposed continuation of Amherst Street.

VI. From Tank Square opposite Old Court House Street in a straight line nearly parallel to the projected new line of the Chitpore Road, (No. III. above mentioned) to Sobha Bazar.

VII. From Upper Circular Road at the end of Manicktola Road, in the same line with Manicktola Road, and in continuation of it to where the last mentioned road (No. VI.) will cross Nimtola Street.

VIII. From the back of the New Mint in a straight line out of Clive Street, and at right angles to it to the corner of the late Petty Court Jail in Machooa Bazar Street.

The Tanks being intended to be six in number, and each 1000 feet square and 20 feet deep, two of them by the side of the Upper Circular Road, between Elliott Street and Dhurumtolla Street, two of them by the side of Amherst Street, and two

of them by the side of the projected Street from Park Street to Chitpore Bridge, near Raja Rajkissen's Ghaut (Street No. 2, above mentioned,) viz. one of these two between Mooktaram Baboo's Street, and the new Street from Nimtola Street to Manicktola Road, and the other at Sham-bazar.—*A.* The principles upon which these alterations are proposed in the present condition of the town, are universally acknowledged as applicable to all dense and populous cities. The specific measures suggested by Lieut. Abercrombie, appear to me the most judicious and practicable which can be adopted with regard to Calcutta, and those which have reference to the Native part of the town are by far the most urgent in point of general utility.

[No. 13 A.]

D. Stewart, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
January, 1838.

Q. 2. Are you of opinion that such large Tanks as are above mentioned in the situations above mentioned, if kept clean, would generate miasmata?—*A.* I should apprehend the generation of miasmata, or in other words the prevalence of disease among the inhabitants in the immediate vicinity of new Tanks during the period of their excavation, and for some time after, until the banks were firmly consolidated and clothed with short grass to the water's edge. But this risk would be greatly lessened by employing a sufficient number of labourers to get through the work *well and quickly*, and doing it at a proper season of the year.

Q. 3. The Committee observe it to be laid down in the letter to their Secretary with which you have favored them, that water in a state of stagnation without any ascertainable principle of contamination is all that is necessary to disengage those miasmata which are latent in alluvial soils. Would the proposed tanks in your opinion if left undisturbed, have this effect?—*A.* Certainly, if left *undisturbed* these tanks would soon become potent generators of miasmata—for all tanks except those with springs in them, must be liable in a certain degree to the objection stated. At the best I would have no dwellings built on their banks, or nearer to any, than the houses in Wellington or Tank-Square.

Q. 4. Is any considerable depth a necessary condition of the salubrity of a tank and are you of opinion that 20 feet would be a sufficient depth to secure such salubrity?—*A.* I should consider the depth, simply, a matter of no great consequence, provided the tank was regularly filled, and the banks were not too sloping.

Q. 5. If the tanks were permitted to form a sound bottom by the deposit of mud not disturbed by cleaning are you of opinion that this deposit or the growth of vegetable matter in the bottom would injure the purity of the water and its salubrity?—*A.* No new tanks can be left with impurity to do this—for although old tanks certainly contain the best and purest water, and this is generally attributed to their having sound and firm mud bottoms,—it must be remembered that this effect is the result of repeated careful cleanings during a series of years in the first instance, by which all the vegetable matters originally mixed with the mud, and the subsequent vegetable growths have been extracted, or have rotted under the pressure of the water and the privation of air: but even old tanks will become bad if their banks are not occasionally cleared from vegetable deposits and growths.

No. 13 A.

D. Stewart, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
January, 1888.

Q. 6. If you are of opinion that these causes would injure the purity of the water are you of opinion that if the tanks were puddled instead of permitting a gradual deposit of mud, and were kept clean and free from vegetation in the bottom it would prevent the water from becoming impure?—A. I do not understand the nature of the process alluded to—vegetation never goes on I believe from the bottom but from sides of tanks which are occasionally exposed to the air. The deposit of mud should be encouraged on the bottom and sides, without vegetable matter.

Q. 7. Would periodical cleaning at such distant intervals as not to prevent or disturb the formation of a sound bottom answer this purpose in tanks not puddled?—A. I should think this is all that can be necessary.

Q. 8. Would it be necessary in all or in most parts of the town in order to the water being wholesome that the bottoms and sides of the tanks should either by the deposit of mud or by puddling be rendered impervious to the water percolating from the surrounding soil?—A. I do not think it would be advisable to attempt by any process to render the new tanks in the first instance impervious in this respect: they will become so in time, of themselves, by the gradual deposit of mud from river water. If the tanks are kept full, the weight of the water will harden this deposit on the bottom and sides.

Q. 9. If these tanks properly formed were supplied from the river during the rains is it your opinion that the water would be wholesome? or are you of opinion that they ought only to be filled by rain water?—A. The river water is very good, and for the above reason I think preferable to rain water: may it not also always be commanded, so as to keep the tanks *full*: a matter in my opinion of the first importance.

Q. 10. It is in evidence before the Committee that the state of the Suburbs is such as to generate miasmata to an extent extremely prejudicial to health, are you of opinion that these miasmata extend to affect the salubrity of Calcutta and Chowringhee?—A. I have no doubt they do.

Q. 11. It is also in evidence before the Committee that the neighbourhood of the Salt-water Lake is extremely insalubrious, are you of opinion that the miasmata there generated extend their influence over Calcutta, and Chowringhee?—A. I do not think Calcutta would be sensibly affected by its vicinity to the Salt Lakes, were the intervening country and the Suburbs free from objection. It doubtlessly contributes at present to the insalubrity of Calcutta.

Q. 12. Are you acquainted with any dense border of jungle or wood extending in the vicinity of the Salt-water Lake between it and Calcutta and do you think that this operates as a barricade against the influence of the miasma there generated?—A. I am not aware of any such *belt*, but even if there were I should not expect any good from it.

Q. 13. Are you acquainted with any such border lying N. E. of the great jheel lying East of the Garden Reach road?—A. I do not know of any.

Q. 14. Are you of opinion that the draining and cleaning of the Suburbs mentioned in Mr. Martin's Medical Topographical Report so as to prevent the formation of miasma within their limits and extending the same precaution to the neighbourhood of the Saltwater Lake would render Calcutta and Chowringhee free from the influence of miasma not generated within their own compass?—A. I do certainly think that these measures, coupled with the prohibition of rice cultivation, would have this effect.

A.
D. Stewart, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
January, 1838.

Q. 15. Are you of opinion that there is any danger of generating miasma from the having an open channel of water of such width as to form a canal for the smaller description of boats running through the centre of the town of Calcutta and into the Salt-water Lake forming a head of water or reservoir for scouring the sewers and consequently having frequent falls and currents?—A. The measure would not in my opinion be attended with any danger, and would, on the contrary greatly contribute to cleanliness and health.

Q. 16. Is it sufficient to prevent the occurrence of miasma that the surface be kept dry, or is it necessary that the soil should be kept dry to a certain depth?—A. A dry surface is not *all* that can be considered sufficient or desirable, although, it is perhaps all that is practicable in Bengal.

Q. 17. Are you acquainted with the levels of Calcutta and its neighbourhood, and are you of opinion they would admit of drainage to a sufficient depth to avoid this consequence?—A. I cannot say.

Q. 18. Are you of opinion that the Suburb of Allipore which Mr. Martin states to be considered a healthy locality and believes with justice considered more so than Calcutta being better raised and drained, requires further improvement in drainage and levelling and clearing, in order to prevent the generation within that locality of miasma prejudicial to the health of Calcutta?—A. Much may still be done there.

No. 15 B.

D. Stewart, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
25th January, 1838.

No. 13 B.

Thursday, 25th January, 1838.

Duncan Stewart, Esquire's Answers to the Additional Questions that were sent to him.

Q. 19. You have stated in answer to a previous question proposed to you by the Committee that the large tanks proposed in the situations marked out by Lieut. Abercrombie on the plan of Calcutta, would in your opinion if left undisturbed, soon become potent generators of miasmata, for that all tanks except those with springs in them must be liable in a certain degree to this objection, and that you would have no dwellings built nearer to any of them than the houses in Wellington or Tank-square. Are you aware of any generation of miasmata by the tanks in Wellington and Tank-square which is prejudicial to the health of the inhabitants of those Squares?—*A.* I have instanced these Squares as models of good tanks, and stated the risk of having any houses built *nearer* a new tank, than those in these Squares, having in my eye the well known insalubrity of the Serjeant's Barracks, and the gate quarters in Fort William overhanging the ditch, which is in fact a tank.

Q. 20. The Committee apprehend that the tanks proposed must be left undisturbed except by periodical cleansing at such distant intervals as not to prevent or disturb the formation of a sound bottom in order to insure the purity and wholesomeness of the water contained in them. You have said that old tanks having sound and firm mud bottoms is the result of repeated careful cleanings during a series of years in the first instance, by which all the vegetable matters originally mixed with the mud and the subsequent vegetable growths have been extracted or have rotted, under the pressure of the water and the privation of air. Are you of opinion that if the proposed tanks were subjected to such repeated careful cleanings at such intervals as are above mentioned, these tanks would still soon become potent generators of miasmata, or generators of miasmata in any considerably insalubrious degree?—*A.* No, not so soon as if left entirely undisturbed. But I would recommend a more frequent and constant *disturbance* than the mere cleaning at distant intervals. If a proper use is made of the water by employing it, not alone for culinary purposes, but in watering the streets, scouring the drains, washing and cleaning the houses, the utensils, the furniture, the clothing, the persons of the inhabitants, the demand on these reservoirs will necessitate a much more frequent filling than seems contemplated: probably once a week or once a month, and thus the water, constantly *disturbed* and changed will never be stagnant.

Q. 21. If you are of opinion in the affirmative in answer to the above question, are you aware of any means that can be resorted to prevent such tanks from generating noxious exhalations, or are you of opinion that their insalubrity in this respect may be more than counterbalanced by the good effects of the ample supply

of wholesome water upon the health of the inhabitants, and to what degree do you think their insalubrity would extend?—*A.* My reply to this question would be, keep the tanks always full, fill them if need be every night, and let them be *used* largely every day. If the proposed reservoir is to be supplied, as I presume it must be from the river, by a steam engine, could not the tanks derive supplies from thence daily by sluices self-regulating, like the cisterns in the houses in Edinburgh, and be always full.

No. 13 B.
D. Stewart, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
25th January, 1838.

Q. 22. The object proposed to be accomplished by rendering the bottoms and sides of the new tanks, impervious to water percolating from the surrounding soil is to exclude the admission of water impregnated with saltpetre or other salts which generally abounds here in so great a degree, and is destructive of the wholesomeness of the water in so great a number of the existing tanks. The process of puddling consists in the working of earth or sand in water with a spade till it becomes of a solid consistency admitting no water to escape or to enter through it. In what do the injurious consequences consist of so rendering the new tanks in the first instance impervious?—*A.* I can anticipate no bad consequence from this process whatever: I should doubt its practicability except with clay: and should think it scarcely necessary to guard against the ingress of external waters, if the tanks are filled and kept full from above.

Q. 23. You have stated that if the tanks are kept full the weight of the water will harden the deposit on the bottom and sides—that the river water is very good and for the above reason you think preferable to rain water, and you ask whether it may not always be commanded so as to keep the tanks full, a matter in your opinion of the first importance. The Committee agree in opinion as to the importance of keeping the tanks full as possible but they have been led to believe that for a considerable part of the year the river water cannot be obtained but in a brackish state which is unpalatable and unwholesome. Are you of opinion that this apprehension is unfounded or in what degree do you think it unfounded?—*A.* I prefer the river water because of its *mud*. Rain water of course carries with it none, and is always an uncertain source of supply. The mud of the river settling and hardening under pressure would form a good foundation for the tanks in time, and one annual clearing would remove what was superfluous. I understand that shipping supply themselves with river water all the year round at proper times of tide, and I cannot see why a steam engine might not be used all the year to keep the large central reservoir filled with water, alike available for culinary and other purposes for the common people. They prefer river water always to tank water. The rich may store up rain water for private use. But the new tanks should be designed *chiefly* for scouring and cleaning the town.

D. STEWART, *Assistant Surgeon.*

No. 16.

Roopnarain Gossaul,
before
Municipal Enquiry,
2d Sub-Committee,
2d February, 1838.

No. 16.

Town Hall, Friday, 2d February, 1838.

ROOPNARAIN GOSSAUL, *examined.*

Q. 1. Can you inform the Committee what the terms were on which the Lottery used to buy their ground and to sell what they had no occasion for?—*A.* Yes, I can.

Q. 2. On what part of the town was the ground the dearest?—*A.* Between the Strand and Clive Street.

Q. 3. What did you pay on an average per cottah?—*A.* From 800 to 1,600 Rs. in that part.

Q. 4. Did you sell any part after applying what you required?—*A.* Yes, Mr. Trotter purchased some, we sold about four biggahs, at 1900 Rs. per cottah. That was ground filled up from the river by the Committee.

Q. 5. Do you know of that ground being since sold to Rustomjee Cowasjee, Esq.?—I have sold from 2000 to 800 Rs.*

Q. 6. What do you think was the average value in that quarter when the Lottery Committee purchased?—*A.* An average of 1200 Rs. per cottah. A purchase was made at Hautcollah at 800 Rs. per cottah,—the ground not required after forming the road can be sold at 800 Rs., the Committee have refused that rate.

Q. 7. What is the cheapest part of the town in which you bought ground?—*A.* Loudon Place, Short's Bazar.

Q. 8. What did you pay then?—*A.* About 50 Rs. per cottah—we bought in 1820.

Q. 9. Have you sold any there?—*A.* Yes, we sold from 150 to 200 Rs. per cottah. The Committee paid the improvements for tank, road, &c.

Q. 10. In what other part of the town did you purchase ground?—*A.* In Amherst Street, Cornwallis Street, and the Female Society's School.

Q. 11. What did you pay then?—*A.* The average was 200 Rs.

* NOTE.—Rustomjee Cowasjee, Esq. Member of the Committee states that he purchased the same property at 500 Rs. per cottah—the first purchase was in 1824, the last in 1834.

Q. 12. Have you sold any?—A. Yes, but the purchaser Mr. Money threw up his bargain—he bought from 380 to 410 Rs. per cottah in Amherst Street and Cornwallis Street.

Q. 13. Was he supposed to have paid too high at the time?—A. No, a moderate price. We have sold there as high as 500 Rs per cottah smaller lots.

Q. 14. Did you buy any in the centre of the town?—A. We paid for widening Chitpore road. The average was 600 Rs. per cottah, exclusive of buildings. We have not resold there.

Q. 15. It is your opinion that the value of the ground on the side of the road was increased in consequence of your improvements?—A. Yes, doubled.

Q. 16. Do you know of any sales by proprietors when these improvements were made and at what rate?—A. After the improvements Ramgopaul Mullick bought then from 800 to 1,000 Rs. per cottah.

Q. 17. Did the Committee make any road from the Chitpore road to the river?—A. No.

Q. 18. Do you recollect the quantity of ground bought for Wellington Square?—A. Sixteen or seventeen biggahs. We paid from 200 to 300 Rs. per cottah. We sold the remainder at 400 Rs., about four biggahs. I have the accounts in my possession which I can produce if required with permission of the Committee.

Q. 19. Do you know the expense of making the tank in Wellington Square?—A. Yes, I made all the tanks, average 2-5-4 per chowkah, 3 chowkah deep—27 feet.

Q. 20. What is the size of the tank in Wellington Square?—A. Oval, 500 by 250.

Q. 21. In your opinion would the expense be much increased if the tank were 1,000 feet square?—A. No, the expense of digging per chowkah will be the same—the conveyance of earth will be increased.

Q. 22. This price including removing the earth?—A. Yes, 40 feet from the edge.

Q. 23. If the tank is 1000 feet wide the distance from the middle is greater, will that not increase the expense?—A. Yes, a little perhaps, about one-fourth, about 9 annas per chowkah.

Q. 24. Is the ground generally cheaper at present than when the Lottery Committee purchased?—A. Yes, a great deal cheaper. The Lottery Committee will now sell ground they formerly valued at 500, at 200 Rs. per cottah.

Q. 25. Do you think that is the average reduction in the value of ground in Calcutta?—A. Yes, the ground which I purchased at 1,600 I could now get at 500 Rs. ground we paid 50 was sold the other day at 22 to 25 Rs.; ground we paid 400 to 600, 200 to 250 Rs. per cottah.

No. 16.

Roopnaram Gossaul,
before
Municipal Enquiry,
2d Sub-Committee,
2d February, 1838.

Q. 26. If ground were bought 60 feet wide for a road and 60 feet on each side and the Government were to sell after making the road the side strips, how much do you think that would sell for?—A. Fifty per cent. more than the purchase money. If much wider it would not sell so well. The Lottery Committee had estimated a road from the new Mint to the Chitpore road by widening the Bhortollah Gully.

Q. 27. At what price do you think ground could now be bought for the formation of that road?—A. At an average of 350 Rs. per cottah, besides buildings, only four or five large buildings.

Q. 28. Can you form any opinion what those buildings would cost?—A. I have an estimate.

Q. 29. If the sides were re-sold what would they fetch?—A. 600 Rs. per cottah if not more than 30 feet wide. I would not recommend the road to be more than 30 feet wide and 15 feet on each side for sale.

No. 6 A.

F. H. BRETT, Esq.

No. 6 A.

F. H. Brett, Esq.
to
Municipal Enquiry,
2d Sub-Committee.*Prospectus of the Central Hospital and Hospital of Surgery, Calcutta.*

Few are aware of the extent of disease prevailing amongst their fellow creatures in this city and district. And as most of these have nothing but their daily labor to depend upon for subsistence, want, misery, and too frequently a fatal termination is the result. Personal enquiry can alone convey an adequate idea of the fact. In the space of two months and without a complete establishment, with the resources of the Bazar and Native Hakeems, a private stock of European Medicines, and pecuniary support of Baboo Gour Mohun Day, Mr. M. Manuk, &c., the annexed document will exhibit the number of Medical and Surgical diseases treated, and the number of Surgical operations performed, for extirpation of tumours from various parts of the body, removing of cancer and other malignant morbid parts, tying arteries, cutting for stone, cataract and other diseases of the eye, amounting to eighty-four, extirpation of the parotid gland, *all* of which have been successful, with the exception of three or four eye cases, many of the operations occurred in the presence of Dr. Drummond, Surgeon to the Right Honorable the Governor General, and Dr. Corbyn, Garrison Surgeon, &c. The above is sufficient evidence to prove what great benefit might be conferred on these destitute creatures by a well conducted and liberally supported institution, for as their confidence increases, and the means of relieving their wants, their numbers will also be greatly augmented.

Such is my conviction of the immense advantage of the institution which I have ventured to suggest, the perfect success and public utility of which has already been demonstrated, that I cannot too strongly advocate the measure.

The advantages of a Hospital over a Dispensary are the following. In the former, the afflicted individual is clothed, cleansed, comforted, watched and treated systematically, and his malady is eradicated, he is never lost sight of by his Medical attendant, whose interest is kept up in the progress of cure. At the latter he receives a dose of Medicine, his disease cannot be watched. If the first administration does not meet his anticipations he loses confidence and seldom returns. Then as to the greater expense of a Hospital, let the institution be established, a Central General Hospital with Fever wards, and let its benefits be proved to demonstration and all the community will come forward. It will become a wealthy institution, like many others which were commenced in the same way, with small finances, but zeal, enterprize, and a good cause.

The present Native Hospital does not embrace anything of this kind, its benefits are limited to a few, chiefly accidents, and those few not within the precincts of the populous parts of the city, hence the suggestion of the "Fever Hospital," which application only embraces a *part* of the beneficent intention which should be included in a Hospital, and would alone be useless, for Fever patients *only* will never resort to a Hospital, unless the Native confidence is obtained by the cure of all diseases, Medical and Surgical promiscuously.

No. 6 A.
F. H. Brett, Esq.
to
Municipal Enquiry,
2d Sub-Committee.

As a proof of my disinterestedness, I offer my time and my mind, with such talents as I may possess to the furtherance of the above, and having placed the institution on a popular and prosperous footing, I will resign it into the hands of any competent Medical Officer whom the Fever Hospital Committee and the community may select.

With regard to the monthly amount required I may briefly state, that the extent of good will be in an exact ratio with the means, which if too limited, many deserving objects may be rejected.

There is a splendid house in the vicinity of my small Hospital, not unlike St. Bartholemew's Hospital, which may be obtained on a monthly rent of rupees 150.

F. H. BRETT, *Assistant Surgeon,*
Governor General's Body Guard.

No. 6 B. *Estimate of Monthly Expenditure for the Central Hospital and Hospital of Surgery, Calcutta.*

Head Native Hakeem,	50
Head Native Assistant Surgeon or more intelligent class of Zurrars,	20
A Native Doctor, Moosulman,	10
A Ditto Ditto, Hindoo,	10
Two Dressers at 4,	8
Two Cooks at 5,	10
Two Coolies at 4, ...	8
Two Sweepers at 4,	8
Two Bheesties at 4,	8
One Darwan,	5
One Sircar,	10
Five Dhoolee Bearers,	21
	<hr/> 168
Bazar Medicines,	40
Dieting 50 Patients,	200
Occasional charities and clothing to indigent discharged,	30
Miscellaneous expenses,	50
	<hr/> 320
	<hr/> 488

F. H. BRETT.

MEMORANDUM.—Government will sanction all Europe Medicines and Instruments, and would, I should presume, afford it further support, and allow a branch of the vaccine establishment to be attached, and provide a house such as I have suggested.

F. H. B.

*List of Surgical Cases and Medical Diseases in the Central Hospital
and Hospital of Surgery from 17th December 1836 to 17th
January 1837—Jorauanko.*

No. 6 C.

F. H. Brett, Esq.
to
Municipal Enquiry,
2d Sub-Committee.

DISEASES.	NUMBERS.	REMARKS.
Boil	48	
Bubo.....	30	
Cancer of Lip	1	1 Operation, successful.
Contraction of the Arm	1	1 Do, partially successful.
Dropsy.....	3	
Elephantiasis	3	
Elephantiasis of Scrotum & Penis	2	2 Operations, successful.
Extirpation of Parotid Gland and tying the Carotid Artery }	1	1 Ditto, ditto.
Extirpation of Tumor of neck, dissected off from the carotid Artery and Parvagum, the internal and external jugular veins being wounded and the former secured	1	1 Operation.
Fracture	9	
Gonorrhœa	29	
Hydrocele	6	6 Operations, 5 successful.
Leprosy	4	
Psora	24	
Pimple.....	4	
Piles.....	19	2 Operations, successful.
Phymosis.....	1	1 Ditto, ditto.
Ringworm	24	
Syphilis	70	
Stone of Bladder.....	4	3 Operations, successful.
Ulcers	60	
Ulcerated Nose	4	
Wen.....	5	4 Operations, successful.
Wound and Accidents	7	
Other Diseases	8	
	368	

Surgical.

No. 6 C.
F. H. Brett, Esq.
40
Municipal Enquiry,
2d Sub-Committee.

	DISEASES.	NUMBERS.	REMARKS.
<i>Ophthalmic Diseases.</i>	Amaurosis	11	54 Operations, 4 successful. 1 Ditto, successful. 3 Ditto, ditto.
	Cataract	54	
	Closed Pupil	10	
	Fistula Lacrymalis	5	
	Foreign body in Cornea.....	1	
	Glaucoma	16	
	Hypopion	1	
	Iritis.....	2	
	Leucoma	9	
	Nebulous Cornea	20	
	Nyctalopia	18	
	Ophthalmia.....	76	
	Ophthalmia Purulenta	4	
	Ophthalmia with Ulcer of Cornea,	1	4 Operations, successful.
	Ptyrigium.....	7	
	Staphyloma	8	
	Suppression of the Globe	2	
<i>Medical Diseases.</i>	Trichiasis.....	4	
	Ulcer of Cornea	9	
		258	
	Anomalous	30	
	Asthma	29	
	Diarrhœa	34	
	Dysentery	36	
	Fevers	97	
	Head-ache	27	
	Mania	3	
	Palsy	3	
	Pulmonic Affections	9	
	Rheumatism	111	
	Spleen	22	
Total.....		401	
		1027	

F. H. BRETT, *Assistant Surgeon,*

Governor General's Body Guard.

No. 1 D.

2d March, 1837.

BABOO PROSONOCOMAR TAGORE,

Secretary Sub-Committee Municipal Enquiry.

SIR,

In reply to your Letter of the 24th ultimo, I beg leave to inform the Sub-Committee, that I see no reason to alter my opinion formerly expressed concerning the proposed method of "draining and cleansing the town of Calcutta" submitted to Government by Captain J. Thomson. I do not think the plan will reduce the present establishment expenditure, nor do I think it will succeed under the existing Byc-Laws for the governance of the town, or under any other that are not drawn up with more attention than appears to have been bestowed on those that are at present in force, or are not, when passed as law, strictly acted upon.

I do not think it advisable to place foot pavements or trottoires at the sides of the streets in Calcutta.

I am, Sir,

Your obedient Servant,

W. ABERCROMBIE, *Licut.*

Superintendent of Roads, Conservancy and Public Works.

Calcutta, 2d March, 1837.

No. 12 G.

Capt. W. N. Forbes,
to
Municipal Enquiry,
2d Sub-Committee,
14th January, 1838.

No. 12 G.

CAPTAIN W. N. FORBES,

To the Hon'ble Sir John P. Grant, &c. &c. &c.

MY DEAR SIR JOHN GRANT,

Although I have not at present the means of referring to the evidence (or rather opinions) formerly expressed by me, my impression is that the general observations I hazarded respecting the pernicious effects of jungle combined with imperfect drainage—were (in the course of the explanation attempted of the system of drainage proposed) directly applied to some of the localities mentioned in your letter of yesterday—whether so stated or not, I assuredly conceived the plan adverted to might be rendered subservient to the *improvement in this respect* not merely of Calcutta and Chowringhee but also of *that* of the ground lying between the town and the Circular Road, with *that* of the surface included between the eastern part of Chowringhee and the Salt-water Lake and that of the villages situated between the southern range of the Circular Road and Tolly's Nullah.

I must regret however that not being able to find time for carefully surveying and examining all these localities, expressly with reference to their state as concerns jungle and imperfect drainage, it is at present out of my power to offer satisfactory replies to the questions you have put, and I can but remark that did circumstances admit of my undertaking such a survey I should be inclined to regard all quarters imperfectly drained where the rain water, in place of being freely carried off by drains into the River or Nullah or Lake, or into large *well formed tanks*, was received (with all varieties of filths) into shallow ill-shaped ponds, or weedy and offensive pools and puddles. Further as concerns *jungle and woon*, that with the exception of a dense *BORDER of the LATTER* in the vicinity of the Salt-water Lake, and of another to the Northward and Eastward of the great Jheel lying south of the Garden Reach roads, intended to barricade off from Calcutta and its Suburbs the noxious exhalations of the Lake and Jheel (known to be comparatively harmless at a height of, 15 feet from the ground), it would be desirable to have *cut down and removed, all trees and bushes*, save those usefully bearing fruit or those kept well-ventilated for burning or for ornament in gardens and pleasure ground, throughout the extent of country occupied by the city and included between its *site* and *those* of the southern and eastern fever borders or outworks described.

Although at present much pressed by business in the Mint I shall have pleasure in being in attendance on your *Committee* (I presume at the Town Hall) at $\frac{1}{2}$ past 12 o'clock to-morrow.

I am,

My dear Sir John,

Very sincerely your's,

Sunday, January 14, 1838.

W. N. FORBES.

No. 13 C.

D. STEWART, Esq.

Yearly Total of Daily Applicants for Medicine at the Colingah Dispensary for the years 1834-35-36-37, and Classification of their Diseases.

Calcutta, 1st March, 1838.

	1834	1835	1836	1837	TOTAL.
Diseases of the Digestive Organs,	8707	7889	7358	7879	
Diseases of Respiratory ditto,	1921	2228	2531	2723	
Diseases of Circulation,	0	21	8	15	
Diseases of Brain and Nervous System,	474	449	471	627	
Febrile Diseases,	25766	18433	15285	17505	
Cholera,	125	67	33	69	
Dysentery,	2941	2455	2176	2634	
Rheumatism,	12695	10785	10308	9877	
Tropical Diseases,	520	406	428	271	
Miscellaneous,	2692	3763	3913	3685	
Total,	55841	46496	42511	45285	190133

Yearly Total of Daily Applicants for Surgical Treatment at the Colingah Dispensary for the years 1834-35-36-37, and Classification of their Diseases.

Calcutta, 1st March, 1838.

	1834	1835	1836	1837	TOTAL.
Cutaneous Diseases,	5816	6094	6981	5799	
Venereal Diseases,	4491	4648	5398	6316	
Ulcers, Abscess, Cancers... ..	10709	13507	12806	12352	
Fractures,	47	38	52	48	
Dislocations,	6	13	11	10	
Diseases of Urinary Organs,	199	279	180	510	
Diseases of the Eye,	210	196	134	306	
Miscellaneous,	6523	6733	7435	7649	
Total,	28004	31508	32997	32990	125499

D. STEWART, M. D.,

Surgeon.

CHARLES REID, Apothecary in Charge.

No. 13 C.

D. Stewart, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
1st March, 1838.

No. 13 C.

—
D. Stewart, Esq.
to

Municipal Enquiry,
2d Sub-Committee,
1st March, 1838.

NOTE.—This table affords most imperfect Statistical Information. It amounts in truth only to the number of prescriptions supplied or of dressings applied. Since the name of each patient is entered anew in the Register every time he makes his appearance and application at the Dispensary. It is obvious that a case of Rheumatism may be able to attend daily for any length of time ; while a Fever patient may not be able to visit more than once or twice, and a case of dislocation is disposed of at once.

The average number of daily applicants is 250. With the present establishment it is not possible to make any alteration in the system : which, though defective certainly works well.

D. S.

No. 17.

R. O'SHAUGHNESSY, Esq.

No. 17.

R. O'Shaughnessy, Esq.
to
Municipal Enquiry,
2d Sub-Committee.

*Yearly Total of Daily Applicants for Medicine at the Gurranhutta
Dispensary for the years 1834-35-36-37, and
classification of their Diseases.*

	1834	1835	1836	1837
Diseases of the Digestive Organs,	8211	9702	10501	10097
Ditto Respiratory Ditto,	745	999	1379	1213
Ditto Circulation,	3	18	13	12
Ditto Brain and Nervous System,	291	278	259	270
Febrile Diseases,	9042	8323	6739	5774
Cholera,	42	38	51	45
Dysentery,	2475	1996	2285	2399
Rheumatism,	14984	14773	14022	14859
Dropsical Diseases,	155	218	252	143
Miscellaneous Diseases,	2388	2943	3044	2444
Total,	38336	39288	38545	37256

*Yearly Total of Daily Applicants for Surgical Treatment at the
Gurranhutta Dispensary for the years 1834-35-36-37, and
classification of their Diseases.*

	1834	1835	1836	1837
Cutaneous Diseases,	7348	6879	6877	6272
Venercal ditto,	7763	10303	11504	10724
Ulcers, Abscesses, Cancers, &c.,	14909	14592	15040	16108
Fractures,	54	74	61	37
Dislocations,	13	20	14	22
Diseases of the Urinary Organs,	250	244	462	626
Ditto Eye,	739	1020	1008	1171
Miscellaneous,	12366	11131	10403	9525
Total,	43442	44263	45371	44485

R. O'SHAUGHNESSY,

Superintendent of the Gurranhutta Dispensary.

No. 18.

Mr. John Phipps,
to
Municipal Enquiry,
2d Sub-Committee,
12th November, 1836.

No. 18.

SUBMITTED BY MR. JOHN PHIPPS AT THE MEETING OF THE SECOND
SUB-COMMITTEE OF MUNICIPAL ENQUIRY, ON THE 12TH NOV. 1836.

To the Magistrates in the Conservancy Department.

GENTLEMEN,

We the undersigned inhabitants of the West end of Jaun Bazar Street, respectfully beg leave to represent the following grievances for your consideration and redress.

A fish market has just been opened close to the margin of the Street opposite to Jaun Bazar First Lane, contiguous to the houses we respectively occupy, which we find a most intolerable nuisance. Putrid fish, particularly chingree, are brought to this market daily, which emit a most abominable stench, and the refuse of the fish and their filthy water, are in the morning or evening swept into the public drain, which causes the worst part of the nuisance, severely affecting the olfactory nerves, and cannot but be very prejudicial to health, as several of us already feel sensibly, and which naturally causes us much alarm. If this grievance be suffered to continue, it will be ruinous to the immediate neighbourhood, where no fish market before existed.

We therefore respectfully request that you will be pleased to direct an inspection of the premises—(about 2 or 3 o'clock in the afternoon, at which time the bad fish are brought to the market and about 7 o'clock in the morning, and about the same hour in the evening, when the fetid water from the fish stalls is swept into the public drain, and cause the evil to be remedied, which we beg to suggest, might at least partially, be effected without any considerable expense, loss or inconvenience to the proprietor of the Bazar, by removing the fish stalls further towards the northern part of his ground, at present unoccupied, and to prevent the fetid water from issuing into the public drain, close to the front of our dwelling (the most material part of the grievance herein set forth, and of which the natives also complain. Trusting that this representation will meet with early notice from the Conservancy Department.

We are, Gentlemen,

Your most obedient Servants,

(Signed) JOHN PHIPPS.
" THOMAS BLACK.
" WILLIAM RUSHTON.
" C. POTE.
" MICHL. BETTS.
A VISITOR AT NO. 5.
" J. D. DOMBAL.

Calcutta, 25th October, 1836.

This representation was referred by Mr. D. McFarlan, Chief Magistrate, to Lieut. Abercrombie, Superintendent of Roads, and by him to Mr. Campbell, Overseer, who called upon me on the subject on the 1st November, 1836.

To A. ROGERS, Esq.

Acting Secretary to the Second

Sub-Committee of the Fever Hospital.

No. 18.

Mr. John Phipps,
to
Municipal Enquiry,
2d Sub-Committee,
12th November, 1836.

SIR,

In addition to the information contained in the copy of an address to the Magistrates in the Conservancy Department, dated the 25th ultimo, and signed by myself and neighbours, laid before your Committee this day, representing the existence of nuisances in the new native Bazar on the north side, near the west end of Jaun Bazar street, opposite Jaun Bazar First Lane—I beg to state that the public drains in the vicinity just indicated, are in very imperfect repair, so that the water does not run off readily, but lodges in different parts, and consequently causes a great stench, part of the drain on the south side of the street was recently partially repaired—but a quantity of filthy water still lodges and constantly remains at the north east corner of my house, No. 5, Jaun Bazar street. In the new Bazar above alluded to, several toddy shops have recently been opened, the persons resorting to which, particularly late at night, make great noises, together with hordes of the vilest females located in the same Bazar, so as to disturb the rest of the surrounding neighbours, amongst whom are several respectable families, having many children.

I beg to observe that I have been an inhabitant of Calcutta upwards of forty years, twenty-five of which in the neighbourhood in question.

I am, Sir,

Your most obedient Servant,

JOHN PHIPPS.

Calcutta, 12th November, 1836.

No. 19.

G. J. Gordon, Esq.
to
Municipal Enquiry,
2d Sub-Committee.
1837.

No. 19.

G. J. GORDON, Esq.

*Remarks on the Tides of the Hooghly and the Levels of Calcutta by
G. J. Gordon, Esq. 1837.*

The lowest fall of the river is 16 feet below the lowest part of Calcutta.

The lowest part of Calcutta is 4 feet 9 inches below the highest rise of the river.

The lowest part of Calcutta is 7 feet above low water mark at the least fall of the ebb of the river in the rains, except in one extraordinary instance of inland inundation, in September 1823, when at ebb the river remained 2.4 inches higher than the lowest part of Calcutta. Kyd however made the fall of the ebb in neap tides in the rains to be only 5 feet 10 inches below the lowest part of Calcutta.

In the dry season the rise and fall of the neap tides appear to be 4 feet 6 inches.

In March the neap floods in the river are only eight inches higher than ordinary high water in the lake.

In March the lowest fall of the lake is 4 feet 9 inches higher than the lowest fall of the Hooghly, but 2 feet 9 inches below the lowest flood of the river.

In the rains when the tide falls least, the lowest part of Calcutta is 7 feet above the level of the river at low water.

There is therefore a sufficient fall to clear a great sewer at that season.

The lowest flood tide in the dry season is nearly 9 feet lower than the lowest part of Calcutta.

A reservoir therefore to contain a head of water at that season ought to be 11 feet deep below the lowest level to contain when filled by the tide only 2 feet of water, with a fall of three feet to the river as the last runs off.

The river rises occasionally in the rains four feet and a half above the level of the lowest part of Calcutta.

A tunnel therefore, arched over, would be apt to burst open unless its ceiling were 5 feet above the general level in those situations. Allowing the masonry of the arch to be 1 foot and a half in thickness, and the metalling of the road over it to be 9 inches, the whole rise of the road passing over the tunnel would be seven feet and a quarter above the general adjacent level.

For the same reason the reservoir ought to be built up full 5 feet above the general level.

This gives the total depth of the reservoir to be 16 feet.

The difference betwixt the greatest rise of the river in the rains and the greatest fall in the cold season is 21 feet. To be safe therefore the tunnel *at the river* should be at least $21\frac{1}{2}$ feet in depth.

The least difference between high and low water appears to be during the reap in April when the difference is 5 feet 8 inches.

The slope of the floor should be 3 feet.

To prevent the sides of the tunnel from being driven in by lateral pressure it would require arched buttresses to be thrown across at half the height with walls at short intervals, or else that a section of the tunnel should form an oval presenting an arch of external resistance on all sides.

To prevent the town from being inundated from the drains opening into the tunnel, which might sometimes contain water nearly 5 feet above the level of the lowest part of the town, it would be necessary to have strong sluices to shut out the river as soon as the tide rose to a certain mark.

No 19.

G. J. Gordon, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
8137.

No. 20.

J. A. Dorin, Esq.
and Others,
to
Municipal Enquiry,
2d Sub-Committee,
July, 1836.

No. 20.

J. A. DORIN, Esq. AND OTHERS.

July, 1836.

*To the Chairman and Members of the Sub-Committee of the
Fever Hospital.*

GENTLEMEN,

In October of last year a letter signed by thirteen proprietors, Assignees of estates, and occupants of Houses in the vicinity of La Martiniere, was forwarded to Government, complaining of a great nuisance in our vicinity arising from the slovenly and imperfect interment of dead bodies in the Mussulmaun Burial Ground to the immediate South of the Lower Circular Road. As we are convinced that the existence as at present of the nuisance in question must be particularly unhealthy, we conceive that it may with much propriety be brought to the notice of your Committee. We earnestly request you will be pleased to enquire into the circumstances set forth in the accompanying copy of our letter to Government and take such steps as may be deemed by you to be necessary either to remedy the nuisance itself or to cause its being placed under such proper regulations and controul, as to ensure the interment there of such bodies only as can be buried at the requisite sufficient depth.

With reference to the remark of Government, that the spot was used as a Burial Ground long before the erection of any houses in the vicinity, we are informed that the grant took place by Government in the time of Warren Hastings, and certainly before there was any reasonable probability, that the city would extend so far beyond its then existing limits; and it appears to us by no means inequitable, now that the city has reached its immediate neighbourhood, that, for the very reason for which it was formerly assigned as a Burial Ground, viz. because it was distant from the Town, it should now be removed entirely from a position in which it is likely to be prejudicial to the health of the surrounding inhabitants.

We have the honor to be,

Gentlemen,

Your obedient Servants,

(Signed) J. A. DORIN.

„ H. B. HENDERSON.

„ M. J. BRAMLEY.

No. 20.

To G. A. BUSHBY, Esq.,

Secretary to the Government of India, &c. &c. &c.

Sir,

We the undersigned, Proprietors, Occupants of Houses, and Assignees or Attornies for property in the vicinity of Theatre Road, Brahmun Bustee and La Martiniere, respectfully solicit to bring through you to the notice of the Hon'ble the Governor General in Council, a great public nuisance existing in our immediate neighbourhood, which is considered by some as likely to prove the cause of unhealthiness as well as of the certain depreciation of the surrounding property—we allude to the Native Burial Ground immediately south of the Lower Circular Road, and close to Cossia Bagaun, which is at present the general place of interment for the Mussulmauns of the southern districts of Calcutta.

That the injurious effects of an extensive Burial Ground, (not as that for Europeans carefully watched and superintended and protected by walls from the incursions of noxious animals and other nuisances,) where the graves are often insufficiently deep, and where numerous bodies of the poorer Mussulmauns are carelessly and imperfectly interred, may reach beyond the immediate vicinity of the nuisance and thus prove prejudicial to the health of all in southern Chowringhee, need not be urged on the consideration of his Honor in Council, neither is it necessary to state that in almost every populous European city, it is the practice to remove the cemeteries and places for public interment, beyond the suburbs and apart from the residences of the inhabitants.

There are, it is believed, numerous equally convenient situations to the eastward or elsewhere, which would be free from the objections here brought to notice, and not to the windward of the city, during the hot and rainy months of the year.

We have, &c.

(Signed) R. C. JENKINS, AS ASSIGNEE OF
MACKINTOSH AND CO.

„ H. B. HENDERSON.
„ JOHN PYNE.
„ CHARLES EGERTON.
„ W. CARR.
„ J. A. DORIN.
„ G. J. SIDDONS.
„ J. DICKSON.
„ J. REID, ATTORNEY FOR MAJOR CUNNINGHAM.
„ J. LLEWELYN.
„ M. J. BRAMLEY.
„ F. D. KELLNER.
„ J. NICHOLSON.
„ H. BARROW.

Calcutta, 24th October, 1835.

No. 20.

J. A. Dorin, Esq.
and Others,
to
Municipal Enquiry,
2d Sub-Committee,
July, 1836.

No. 20,

No. 948.

J. A. Dorin, Esq.
and Others,
to
Municipal Enquiry,
2d Sub-Committee,
July, 1836

TO R. C. JENKINS, Esq.,

Assignee of Mackintosh and Co. and Others.

GENTLEMEN,

I am directed to acknowledge the receipt of your letter of the 24th instant, to the address of Mr. Secretary Bushby, complaining of a nuisance from the Native Burying Ground on the south of the Lower Circular Road, and in reply to state that the Moosulmaun Burying Ground referred to, is an ancient Burying Ground that was used as such long before any of the houses now built in the vicinity were in existence. The Governor of Bengal apprehends, therefore, that it would not be possible to prevent the ground from being used as heretofore, but the Police will of course be ready to use their influence in promoting any measures that may be suggested for abating the nuisance, provided it can be done without interfering with the rights and privileges of existing persons or bodies of the community.

I am, &c.

(Signed) H. T. PRINSEP.

FORT WILLIAM, 21th October, 1835.

No. 21.

J. ALEXANDER, Esq.

July, 1836.

Memorandum on the Drainage of Calcutta.

1. Calcutta being built on an alluvial soil of no very old formation shews in its drainage levels, the peculiarities of such site or position, viz. that the higher ground exists near the river, (by which the deposit of the soil has been made,) and the level becomes lower and lower the more distant it may be from the stream.

2. Hence the great difficulty of properly draining such a position.

3. It is only in the immediate and close neighbourhood of the river that drains with sufficient declension or fall can be led into its channel. The drains of the remaining part of the town must be led into the interior country; where a lake or morass is thus generally formed (as is the case at Calcutta in the S.W. lake) and the declension is generally so slight as to be barely sufficient to carry off the rains and surface waters; even were they cleared of the sluggish matter that commonly fills a drain.

4. The declension of the surface of the ground (on which Calcutta is built) is (as I understand) about 3 feet from the highest ridge along the river bank to the S. W. lake; a general distance of about 3 miles, i. e. the declension may be about 1 foot in a mile: which is little more than sufficient to give a current to clear water, and quite insufficient to carry off the heavy filth that collects in the drains of a populous town.

5. The object then to be considered is since naturally there would not be sufficient force in such a current, to give it an artificial force by encreasing the body of water that would pour through the channels and thus strengthen its power and impetus.

6. It is, I believe, ascertained that the time of high tide in the S.W. lake is about 2 hours later than that in the Hoogly, I would therefore propose to take advantage of this circumstance and thus create the artificial current to which I have alluded.

7. The plan I suggest, is to cut drains at regular distances (5 would be sufficient) from the river to the S. W. lake. To fix flood gates at the river-mouths of these drains. To keep the flood gates closed until about half an hour before the time of high tide in the Hoogly, when the level of the S. W. lake would be still low: then to open them and allow the full tide to fill and rush through the channels, with such force as I think would carry before it all accumulations, which accumulations, (as the drains would thus be cleansed twice in the 24 hours,) would not, it is likely, be of any great amount.

8. The smaller drains can be easily conducted into these large channels and being on the surface may be kept clean by sweeping.

Having no practical knowledge I can only suggest these ideas, as hints, that might perhaps be of some advantage in the present enquiries of the Committee.

Calcutta, July, 1836.

4

J. A.

No. 21.

J. Alexander, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
July, 1836.

No. 22.

R. J. H. Birch, Esq.
to
Municipal Enquiry,
2d Sub Committee,
13th June, 1837.

No. 22.

R. J. H. BIRCH, Esq.

Secretary to the District Charitable Society.

13th June, 1837.

To W. C. HURRY, Esq.

Secretary Municipal Committee.

SIR,

At a Meeting hld yesterday of the General Committee for the relief of sufferers by the late fires, it was resolved, to refer the enclosed to my address from the Sub-Committee of the 4th Division, representing the great scarcity of water in that Division,—for the information of the Municipal Committee, and I forward it accordingly.

Your's obediently,

R. J. H. BIRCH, *Secretary,*

District Charitable Society.

Calcutta, 13th June, 1837.

No. 22.

To CAPTAIN R. J. H. BIRCH,

Secretary to the Fire Committee.

SIR,

The Sub-Committee of the 4th Division begs to call the attention of the General Committee to the want of water in their Division (already alluded to in our report of the 15th ultimo). The only tank now retaining water is that in Wellington Square; all the small private ones, from that to the Lower Circular Road, are dried up, so that the water requires to be brought to several places in our Division, not less than half a mile; the unfortunate people that have had their houses and little all destroyed by fire, from the small relief this Committee has afforded them, in place of procuring food, are obliged to pay three pice for each mussuck of water: this is a heavy charge on the unfortunate poor. We are of opinion that if water had been procurable in sufficient quantity, that many of the different fires, particularly that of Sunday last, the 4th instant, would have been got under. How can it be expected that the Engines can be timely supplied, when the Bhisties have to go a quarter of a mile for water, and sometimes further.

On the 4th instant a fire broke out in Chunam Gully, north side of the Bow Bazar, the nearest tank about half a mile distant from it. On the 5th instant a fire broke out in Colingah near the Colingah Thannah, where there is a small tank about two thousand feet from the spot. On the 6th instant a fire broke out at Mendy Baugaun, where there are two tanks; one of them dry; the owner of the other will not allow any water to be taken from it. These facts are stated from what we daily see and meet within our Division, and not from the reports of others. •

No. 22.
R. J. H. Birch, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
13th June, 1837.

To prevent such distress taking place in future, we urgently recommend, either the digging of 6 or more tanks, or the building the like number of receivers near the Lower Circular Road; the latter we are assured will be found the cheapest whichever plan may be adopted, the aqueduct that has been carried to the east end of the Durumtollah, might be continued round the Lower Circular Road, and to be connected with the tanks,—the Engine now at work at Chaundpall Ghaut will be found quite sufficient, if the aqueduct be kept in good repair; the tanks can be filled, and all others in Calcutta that may have aqueducts leading to them, in the last of the rains, when the Engine is not required to raise water for the roads; This we trust the Committee will take under consideration, and if approved of, to lay the same before Government to prevent the loss of lives and property in future.

The great distress and misery we have witnessed amongst vast numbers of the poor sufferers, are truly appalling.

The poor Hindoos would be grateful for a supply of the Ganges water near their homesteads; as it would save vast numbers of their females going daily a considerable distance for it, for their domestic purposes.

It is to be hoped that many of the wealthy Native Gentlemen will contribute liberally to such a benevolent undertaking, for the benefit of their poor countrymen; and we doubt not that an appeal to their sympathy from competent authority, would induce them to aid therein.

We are,

Your most obedient Servants,

(Signed) GEO. VINT.
„ J. PHIPPS.
„ RAMDHUN GHOSE.
„ C. W. LINDSTEDT.
„ JAS. MADGE.

Calcutta, the 12th June, 1837.

No. 23.

F. P. Strong, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
19th February, 1838.

No. 23.

F. P. STRONG, Esq.

19th February, 1838.

To WILLIAM COBB HURRY, Esq.

Secretary to the Municipal Committee.

SIR,

I have the honor to acknowledge the receipt of your Letter of the 10th instant, and feel flattered that the Committee of Municipal enquiry consider the Papers* on Topography of use. In these Papers, I had in that part which relates to the comparative mortality of Europeans, in my general Tables of Mortality for Calcutta, annexed to my Topographical Papers, purposely left out the Soldiers in the Fort, as well as the Sailors belonging to the Merchant Ships of this Port, because their numbers vary, and they cannot be considered as actual residents; the addition of them therefore to the number of European residents, would not only have rendered the subject of mortality more difficult than it at present is, but would have presented a ratio of mortality amongst the settled Europeans higher than it is in reality. In this latter class, the proportionate mortality might naturally be expected to be less than amongst a class of men such as Soldiers, and especially Sailors, whose habits and mode of living expose them more to effects of climate, than the ordinary European inhabitants.

2. Finding enquiries made as to the best mode of making tanks, I am led to suppose the Municipal Committee contemplate the excavation of such reservoirs of water in localities most desirable for the convenience of the public, and as I have on a former occasion examined the soils about Calcutta and its neighbourhood, it is possible that what I have to offer upon the subject of tanks may be considered of some utility.

3. I believe it will be found that the soil generally is of such a nature that if tanks are properly constructed they may be made to retain the rain water from year to year, without the necessity of introducing river water into them.

4. The upper soils are found almost universally to be very sandy, and calculated to allow the water to escape from the tanks by percolation; but if the clays, which fortunately for Calcutta are sufficiently near the surface to form the beds or floors of tanks, were dug down to, as they lie on an average at about 22 feet deep, and the same clays, a little modified, used to line the sides of the tanks as high as their upper margins, it seems to me probable that this lining (or puddling) would if properly performed, prevent such percolation, whilst it would also prevent the admission of any impure or brackish water from the interior of the soil into the tanks, which I conceive often renders their water somewhat analogous to the well water, which is every where more or less brackish from its infiltration through the earth, and particularly through the stratum of sand which is a little above the clays.

* Published in the Quarterly Journal of the Medical and Physical Society of January, 1838.

5. I think I am borne out in this view of the subject by the nature of the soil, as ascertained in the following experiments which I refer to as the result of certain borings I formerly made in the line of the Circular Road, on each side of the Maharatta Ditch, and to the eastward, on the western margin ; as well as in various other parts of the Salt-water Lake, with a view to ascertain the nature of the soil.

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6. I will begin with the boring at the Baug Bazar Bridge, when the soil was being removed for the present Circular Canal. The Canal labourers had dug a well 21 feet deep from the floor or bottom of the Canal. The whole depth of this well was entirely clay, very compact, and slate coloured, the augur was applied to the bottom of this well, and continued to bring up a similar kind of clay, in part of which was mixed a good deal of peat earth, very black and capable of being burnt. This clay continued to the depth of 96 feet from the floor or bottom of the Canal. At 93 feet we seemed to have tapped a spring, for the rods suddenly dropped two or three feet without the least pressure or moving round, into strong sandy and reddish gravel, and, on withdrawing them, up rushed a column of water which filled the shaft of the well in five minutes, and flowed over the wooden platform on the top of the well, with so much force, that we had great difficulty in stopping it, though the platform was embedded in the clay and had only a hole in the centre, sufficiently large to admit the rods with a small augur. A quantity of very tenaceous clay which had been excavated in making the well, was close by, and with this we thought we had stayed the flow. With a view to ascertain how high this water would rise in a tube, we put one of wrought iron down, which not being quite water-tight, failed, and the following morning early, the late Mr. Kyd and myself conveyed a long leaden tube to the spot, but we found the water had broken through, and so filled the canal, that the labourers upon that work had found it necessary to remove our Gin, &c., and we of course were obliged to give up this operation.

7. This experiment in some degree corresponds with the boring which I had previously made about the centre of this canal three miles from this spot at Sealdah; with this difference, however, that the clay at the latter place, Sealdah, was extremely tenaceous, and of a bright yellow colour ; and, instead of the water rising from 96 feet, it rose from a depth of 50 feet from the platform at the bottom of the canal, or, 70 feet from the surface. Here there was no well, but we bored in clay nearly the entire depth, and so stiff was it that two large Europe-made iron hooks were broken in extricating the rods from out of it. No water appeared till reaching the depth of 70 feet, but at this depth the water overflowed into the canal with much force. Its purity was doubtful, but in the boring at Baug Bazar, the water was entirely sweet. It is therefore difficult to say, whether at the latter place, the water came from the river, or from an artesian spring such as we are in search of.

8. On this boring I have remarked, at page 50 of my Topography, as the result of my observation at that time,—April 23d, 1829, “ That in digging tanks no object is to be gained by making them of extraordinary depth under the expect-

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19th February, 1838.

tation of meeting with springs of fresh water, but that they must be considered rather as reservoirs for rain water," and every experiment since has led me to believe that the Calcutta tanks are not supplied by springs but by rain water, which drains into them from the surface, and oozes through the sandy stratum which is above the clay. From the latter source, particularly, much brackish and impure water is admitted. If, in making new tanks, the stiff clay, which is quite impervious, be dug down to, and then made to form the bed of the tank, I do not conceive that this clay would mix or unite with the water to make it impure, like the water that passes through the saline upper soils, and which might be prevented percolating through the sides of the tank by properly puddling them with some of the same clay a little modified.

9. As for the tanksⁿ draining the water from the surrounding soils, I submit that there is porous earth enough every where to take those waters off.

10. The bottom of the tanks then having an impervious stratum, if the sides be properly puddled or lined, the only consumption of the rain water from these tanks will be by evaporation and use.

11. By this means a quantity of this valuable article will be retained in these reservoirs which is now lost, and besides the purity of the fluid itself being preserved, the poorer classes of our native subjects would have an abundance, where now they have only a scanty supply, and that of the worst description.

12. Should it still be found necessary to resort to tanks for water for the roads, some of the present reservoirs might be set apart especially for the purpose and they might be filled from the river when occasion required.

13. To shew that at no great depth stiff clay abounds in all directions, quite applicable to the purpose of forming impervious floors to tanks, and which if not of itself, yet, when mixed with other materials such as are used for lining (or as it is called puddling) the sides of canals in Europe is calculated to line or puddle our tanks here, I beg to append a series of experiments made by me in continuation of my borings.

14. In a garden on the Calcutta side of the Circular Road between the Durrumtullah and the Burying Ground, I found the usual layer of peat earth and stiff clay within the range of tank-making, and in this clay, at the depth of 70 feet from the surface, hard and large pieces of conker. The difficulties we met with at this depth were so great that we were obliged to abandon the experiment.

15. About two miles eastward of this last boring, and the one at Sealdah before alluded to which are nearly two miles apart, I bored in ground near the margin of the Lake, again at the distance of two miles, to the depth of forty feet, and in both cases, soon came to the same charred, peaty earth, and stiff clay. About a mile more eastward within the Lake, on the banks of its navigable channel, the same appearance to the depth of forty feet presented itself. I now entrusted

the further operation^s on the Lake to a man I could depend upon, who took the coolies I had hired for the purpose, to the northern division of the Lake towards Dum-Dum; also to the eastern parts, and to the southward as far as Bamaunghatta. They brought me from all the different borings samples of earth of the same kind as I have described, with this exception, that towards Bamaunghatta the earth was a little more sandy and that brought from Tardah, five miles beyond the Lake, was perhaps yet more so. I have since examined the soil at the salt works now making five miles beyond and south of Tardah, and found there still less clay and more sand. Indeed so much does the siliceous soil predominate that the embankments are with difficulty made at this place, while on the other hand, the clay so abounds on the Calcutta, or western side of the Lake, that the bunding of the salt works at Bhalliaghaut was effected with ease, and the excavations now making on 150 bigahs of Lake ground as a dock to contain 200 river craft, shew a superabundance of excellent clay near the surface in all directions, and from this spot there is now an excellent embankment formed, which is continued nearly half through the Lake.

16. For information upon the subject of puddling, I would refer to Loudon's Encyclopædia of Agriculture, 2d edition, page 620, article 3824, and for further information, that author refers to the works of Philip, Fulton, Chapman, Plymley, Bladestade, Kindersley, Anderson, Telford, and the article Canal, in the three principal Encyclopædies; but as the Members of the Municipal Committee may not at the moment have these works to refer to, I may mention that it appears from the experience of others that the best coating or lining, for the sides of tanks or canals, is a soil consisting of argillaceous and siliceous earths, well mixed together, both of which I have reason to believe is here everywhere abundant; at any rate this much is certain, that about the depth of 20 feet, a blue clay and sand exists, and if not already fit for the purpose of puddling or lining, could be readily made so.

I have the honor to be, Sir,

Your obedient Servant,

F. P. STRONG.

Calcutta, 17th February, 1838.

No. 23.
F. P. Strong, Esq.
to
Municipal Enquiry,
2d Sub-Committee,
19th February, 1838.

No. 2 D.
Report by
Captain J. Thomson,
1st January, 1835.

*Report by Captain J. Thomson, dated 1st January, 1835, received from
D. McFarlan, Esq., 7th December, 1836.*

CALCUTTA DRAINS.

1. The objects proposed to be attained by this design for the drainage of Calcutta are the prevention of the evils arising from the filling up of the Circular Canal, the danger of the deep open drains at the sides of the streets and the nuisance of the filth which always must remain while the drains are in their present state, also to allow of the construction of foot pavements, and to distribute a convenient supply of water for watering the streets.

2. After considering various designs, the following has been selected as the most economical.

3. With reference to the accompanying plan of Calcutta it will be observed that there is on an average a slope of more than $5\frac{1}{2}$ feet in the mile from the Hoogly river to the Circular Road, which is quite sufficient for the surface drainage, and leaving a fall from the Circular Road to the Hoogly for the sewers or tunnel drains of 5 feet during the low water of the dry season.

The lengths and diameters of the tunnels may be seen in the estimate. They are calculated to carry off into the Hoogly during the rains a fall of 3 inches in the 24 hours.

4. The levels of the bottom floors of the drains are as follows :

Vide Plan annexed.	AB.....	1	} Feet above low water mark or zero. The bottom of each drain being laid throughout.
	CEHIKI	3	
	EFG	4	
	CD.....	5	

The last 3 levels are assumed, so that there shall always be 2 or 3 feet water in the tunnels at high water to scour out the drains, and leave water for the roads; they are made no deeper than this purpose requires for the sake of economy, and the top of the interior of the tunnel would rise to within 3 feet of the surface in order to get as great a fall as possible with the least resistance to the water. The sluices to be on the principle of those used for the Greenock water work which are self-acting, and may be adjusted to open and shut at any time that it may be considered desirable.

5. Under ordinary circumstances the sluices will admit the rising tide at C and I, but the high water will not arrive at the main tunnel AB, until 3 hours after the high water in the Hoogly; there would therefore be a current from A into the river until the tide began to rise, when shutting the sluice at A it would enter the drains at C and I. By a little management in adjusting the sluices a constant current could be kept up through all the drains except AB, and in this latter drain (to prevent any filth accumulating) a strong current of 4 miles an hour could be got from the canal into the river during 9 months in the year.

No. 2 D.
Report by
Captain J. Thomson,
1st January, 1835.

6. During a long continuance of dry weather double the usual quantity of water might be admitted at A and B to run out through the drains at C and I, advantage being taken of the spring tides to scour back again out at the sluice A and prevent any accumulation of mud in AB. If mud accumulates in any of the drains, the sluices in the others being closed the whole would be forced through it, or if this was found insufficient, the west end of the Entallee canal from Koolia bridge, could be formed into a reservoir holding 2 million cubic feet of water to be permitted to run through any of the drains at low water of the Hoogly. During a long continuance of heavy rain and high freshes in the river, although the former system of drainage (see para. 5) would still act yet it might be considered advantageous to allow all the water from the drains to run through the sluice B into the Entallee canal. The quantity of water that the sluice B would deliver (400 cubic feet per second) would cause a current in the Entallee canal of more than 3 miles per hour, which so far from causing a deposit would occasion a scour, and more likely injure the banks.

7. The whole of the ground on which these works would be constructed is a stiff clay nearly water tight except from K to I, which having formerly been the bed of the Hoogly is now a quick sand to an unknown depth, the drain from K to I would therefore be open.

(Signed) J. THOMSON, Captain, Engineer.

Calcutta, 1st January, 1835.

(Copy,) D. McFARLAN, Chief Magistrate.

Estimate of the Expense of carrying into effect the proposed Drainage of Calcutta.

TUNNELS AT 25 RUPEES PER 100 FEET INCLUDING EXCAVATION, &c.

<i>Tunnel.</i>	<i>Length.</i>	<i>Diameter.</i> <i>feet. inch.</i>	<i>Cost.</i>
CD	11000	7 6	74250
EF	10500	8 9	84000
EB	11000	9 6	96250
FG	6100	5 6	30500
BHG	7200	6 0	39600
GK	1000	8 3	7250
EC	2600	12 9	28600
AB	7000	17 0	154000
			<hr/> 514450
		Sluice at A	20000
		" B	12000
		" C	12000
		" I	5000
			<hr/> 49000
Re-making 12½ miles of Road, at 5000 each,			62500
Constructing 25 miles of footpaths and surface drains, at 2400 each,			60000
500 Cesspool drains, gratings, &c. at 150 each,			75000
			<hr/> 197500
Add about 20 miles more of surface drains, footpath, &c. at 5400,			108000
			<hr/> 868950

N. B. Houses in the Streets through which Tunnels would not pass would be obliged to provide themselves with pits and ashpits as is customary in Britain.

(Signed) J. THOMSON, Captain, Engineer.

No. 24.

Report by

A. H. Blechynden, Esq.
7th February, 1835

No. 24.

Report by A. H. Blechynden, Esq., dated 7th February, 1835, received from D. McFarlan, Esq., 7th Dec. 1836.

Details of a Plan for the construction of a Tunnel from the River Hooghly to the Circular Canal for the better Drainage of that portion of the Town of Calcutta through which the proposed Tunnel is to pass.

1st. The difficulty of draining a city so circumstanced as Calcutta, has engaged the attention of scientific and professional men for upwards of half a century, and though numerous and various plans have, at as many different periods, been devised, nothing which can be termed effectual has as yet been the result. This may chiefly be ascribed to the impediments necessarily arising from the position of the city itself, as well as what the river and the Salt-water lake bear to it and the want of a command of water to carry off daily the contents of the drains.

2d. To the above may be added the lowness of its scite, although on the banks of a noble river, the numerous hollows and swamps which exist in the central parts of the town, the effects of the periodical rains, the great height to which the floods rise in the river, during the rainy season, at which period indeed were it not for the Salt-water lake giving an outlet in an easterly direction it would hardly be possible to prevent certain portions of the city from being under water, and last of all the want of adequate Municipal Funds to apply all the resources of art to overcome these natural obstacles to the attainment of an object so much sought after.

3d. It has invariably been the practice for the last 50 or 60 years to convey as much as possible of the city and native town drainage into the river Hooghly; and this has been successful to the extent of about 2.5, while the remainder has been carried to the Salt-water lake. A scheme however was suggested in the year 1821, by Major Schalch to construct pukka sewers of large dimensions from the river to the proposed Circular canal for the conveyance of all the refuse and filth of the city and town, as well as the drainage into the Salt-water lake; but this met with opposition from the Committee appointed by Government to report on this, together with some other plans submitted for the orders of Government by that officer.

4th. As most of the scientific and professional men, who have for years past been consulted on the best mode of draining the city and town of Calcutta, have strongly recommended the plan of draining into the river, and as I have myself for several years adopted that mode; it is with no little diffidence that I now venture to suggest an experimental scheme for draining in another direction, a portion of the town through which a large body of water flows and which has no pukka drains either into the river or into the Circular canal and I feel warranted in recommending the construction of a tunnel from the westward in the centre of the road through Neemtollah under the altered relative position of Calcutta since the formation of the Circular canal.

No. 24.

Report by

A. H. Blechynden, Esq.

7th February, 1836.

5th. The objections which might have been made to this plan formerly, are now destroyed by the surface of the Salt-water Lake being brought close to the Circular road by the new canal, which has dock gates to keep out the high tides of the freshes, and I am of opinion that the apprehension of any detriment to the navigation of the canal may be rendered void by the construction of cesspools at convenient distances eastward of the Circular road to prevent the greater portion of sediment from flowing into the Circular canal, by which means the proposed Tunnel will convey much less mud than is now carried to the canal by any one of the present main sewers.

6th. For the purposes of a more ready comprehension I submit a plan and levels of the roads through which the proposed Tunnel is to pass together with the relative heights of the River and Salt-water Lake, during the dry and rainy seasons of the year.

7th. It appears to me that the most eligible opening for the proposed Tunnel would be north of Radamadub Banerjee's Ghât at Neemtollah, and to pass along the centre of Neemtollah road thence along the centre of Rajah Gour Doss's street, and along the centre of Manicktollah street into the Circular canal, as exhibited and fully explained in the accompanying plan of the roads from Neemtollah Ghât to the Circular road, with levels of the same together with the section and levels of the proposed Tunnel through the centre of those roads.

Vide Plan annexed.

8th. After an attentive consideration of the subject I am of opinion that the floor of the Tunnel should be laid ten feet six inches below the surface of the Strand road, which corresponds with twelve feet on the River gauge capable of admitting all the spring tides in the year for removing and washing out its contents into the Circular canal. This will give a fall or slope of five feet towards the Circular canal in the dry season and will admit of a free current to the stream. For seven or eight months of the year however it will be above the influence of the neap tides, but as this will only occur for a few days each fortnight I do not think the drainage would be impeded sufficiently long to allow the stagnant matter to become offensive.

9th. To obviate however even this possible effect I would suggest that an artificial head of water or reservoir should be constructed near the mouth of the Tunnel with a small sluice which, by regulating such flow of water as may be required to cleanse the Tunnel, would remedy the apprehended evil, and I would further recommend for the prevention of injuries that the head of the Tunnel be protected by a sluice gate to keep out such excess of water as would occasion damage in the periodical rains.

10th. It may be proper to state with reference to the relative heights of the surfaces of the River and Salt-water Lake, and to the proposition for the floor of the Tunnel commencing at 12 feet above low water mark at lowest tides in the river, that a fall of 5 feet will always be left in the dry season between the river and the lake, the level of the latter being 7 feet. In the rains, however, the lake rises to 9 feet reducing the fall to 3 feet making a difference of 2 feet in the two seasons, thereby diminishing in so much the command of level; but as in the rains an additional command of water is afforded by the river which with what falls from the heavens, will in my opinion give such increased impetus to its passage as to

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A. H. Blechynden, Esq.

7th February, 1835.

carry off the whole contents of the Tunnel notwithstanding the diminution of fall during the rains.

11th. I have examined the whole line of the proposed Tunnel, and the only obstacle which presents itself to the undertaking exists between Neemtollah and Manicktollah Streets, arising from the narrowness of Rajah Gour Doss's Street, in four different portions of it, this can be removed by the purchase of a part of the adjoining land, which will not only widen the Street but facilitate the execution of the work: this land, however has some Native brick buildings on it, and will I fear encrease the expense by about Rupees 5000.

12th. Having thus detailed all that appears necessary in explanation of the plan, I beg to submit an estimate of the proposed cost of executing the same which may be computed as follows:

Constructing 100 lineal feet of Tunnel along the centre of the road,	Rs.
at 6 Rs.....	600
Taking up the Roads, excavating the Tunnel, removing the excavation,	
filling up and reconstructing the Road, at 1-8	150
Constructing surface and connecting drains on each side of the Road,	
at 2	200
	<hr/>
Sa. Rs. ...	950

From the above data, the length of the Tunnel being 9800 feet, (the total distance from Neemtollah to the Circular Canal) or more than one mile and three quarters, the cost will amount to 93,100

To which add for sluices and a reservoir 1,200

And 2 cess pools to collect and detain the sediment 500

As also purchase of land and buildings in Rajah Gour Doss's Street . 5,000

Grand Total ... 99,800

or Sa. Rs. 53,769 per mile.

13th. In the preceding Estimate of expence, I have included an additional six inches of thickness for the arch of the Tunnel as well as for the flooring, which will account for the apparent largeness of the sum required though actually less than the cost of the two drains of the Durrumtollah road, notwithstanding its encreased size and the greater expense of digging a foundation on a line several feet lower at its commencement than the drains in question.

14th. If an objection be urged as to the obstruction of the thoroughfare and attendant public inconvenience during the execution of the work, I have to remark that every work of this description must cause temporary inconvenience; but this may be controlled in a great degree, by proper superintendence, and can be considered only as a trifle in comparison with its great and general utility; and in conclusion I would beg to urge that with respect to great thoroughfares in particular, the greater the inconvenience during the execution of the work the greater will be the advantage to the public after its completion.

(Signed) A. H. BLECHYNDEN,

Calcutta, February 7, 1835.

Supt. of Roads.

(Copy,)

D. McFARLAN, Chief Magistrate.

No. 25.

EXTRACT FROM A MINUTE BY THE GOVERNOR GENERAL IN THE FINANCIAL AND REVENUE DEPARTMENT, DATED THE 2ND OF FEBRUARY, 1830, WITH CONNECTED PAPERS, RECEIVED FROM T. SMITH, Esq. JUNIOR MEMBER OF THE MEDICAL BOARD.

No. 25.

T. Smith, Esq.
to

W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee, 8th Dec. 1837.

On the subject of Draining the Salt-water Lake, and improving the Canal.

No. 1. Major Schaleh's Memoir on a plan for the formation of an easy and permanent communication by water between the Upper and Eastern Provinces of India and Calcutta during the dry season.

Para. 2. My project has reference to the canal, which is to connect the Salt-water Lakes with the Hoogley. This plan originated with the late Major Schaleh, and is now in execution under the direction of Captain Prinsep. This work is one of great utility, very much required by the commercial interest of Calcutta, and must prove a source of prosperity to the country in general as well as of revenue to the Government.

3. Highly however as I think of the general measure, it strikes me that the line of the canal may be greatly improved and that with this improvement may be connected the execution of another object of equal utility and advantage with the canal itself, namely, the draining and warping up the Salt-water Lake, the area of which comprises eighteen and a half square miles or about 12,000 acres.

4. By a reference to plan marked No. 2,* the new circular canal now executing, is marked by a blue line, one extremity opening into the Hoogley, the other joining the Entally canal. This latter cut was made about 20 years ago. It communicates with the Salt-water Lake, through which there is a navigable channel which enters a creek, directly communicating with the sea, as will be seen in the general map of the Soonderbunds No. 3,† and is within the influence of the daily tides. The depth of the water in ordinary tides in this channel varies in proportion to the amount of backwater brought to bear upon its different parts; at the most distant point not being more than 2 and 2½ feet, while at the lower end, previous to, and at its junction with the creek, it is not less than 15 and 20 feet, and so continues encreasing in width and depth till its junction with the sea. The various depths of the channel as well as of the water in the lake are marked in the Map No. 2.‡

5. The change which I have to recommend in this plan, is that the new circular canal instead of terminating at the Entally canal, shall be continued round the lake, and as close to it as possible; and shall enter the creek at deep water below Bahmunghatta; that the lake shall be drained and subsequently warped up. The red line on the Map No. 2,§ marks the direction of the proposed new cut.

* † ‡ § The Maps and Plans marked 2 and 3 are not in the possession of the Municipal Committee, it is supposed that they were sent to the India House, but reference to any late Maps of Calcutta and the Soonderbunds will exhibit what is desired.

No. 25.

T. Smith, Esq.
to

W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee, 8th Dec. 1837.

* Vide page 212.

6. Before proceeding further it will be necessary to a due understanding of the questions of drainage and navigation, which have to be considered, that a statement should be given of the levels of Calcutta and of the adjacent country, and of the surface and bottom of the Salt-water lake, as compared with the high and low water mark, in ordinary and spring tides and during the freshes in the Hoogley, in the lake, and at Bahmunghatta. In the gage table annexed to Captain Prinsep's answers to certain questions put to him by me, this information will be found.*

7. It will be observed that the believed lowest bed of the Salt lake is at 2, that the depth is from $1\frac{1}{2}$ to 2 feet, and nowhere exceeds $2\frac{1}{2}$ feet, that the neap tides in the Hoogley in March are 5 feet 4 inches and the lowest springs in March 7 feet 5 inches, below the lowest bed of the lake, in the one case giving 3 feet 4 inches and in the other 5 feet 5 inches fall. It is evident from this, the complete drainage of the lake either into the Hoogley itself, or into the canal is perfectly practicable.

8. The warping up of the lake is a still more easy and certain operation, in as much as in the months of March, April, and May the springs in the Hoogley are 10 feet higher than the lowest bed of the lake and the highest rise of the river in August and September is between 15 and 16 feet.—Vide daily register of Tides in the Hoogley, at Calcutta from 1805 to 1828 by James Kyd, Esq.

9. Nor can a doubt be for one moment entertained of the great superiority of a deep canal of fixed and even dimensions, with high banks serving as roads and towing paths, over a navigable shallow channel, through an open lake, only to be kept open by the use of a dredging machine, and not having the benefit of a lateral embankment, except it be made at a considerable expense.

10. In consequence of the height of the freshes in August and September exceeding the surface of the lower part of Calcutta by near 6 feet and the adjacent planes between 7 and 8 feet, it was necessary to erect lock gates at the mouth of the canal. This precaution would not be requisite if the canal was cut over the dry land and the sides raised to a level, if thought more secure, of the banks of the Hoogley itself. I consider these locks to be objectionable, in as much as when shut, they produce a suspension of the current and a consequent deposit of silt. It may be expected that this process of silting up, so great in the Entally canal, and in the adjoining part of the lake, may be much diminished, when by the new canal, the tides will ebb and flow daily and that during the rains there will be a more rapid current. This will no doubt be the case in the overland cut, and I think it not impossible that the bottom of the new cut, by the effect of the scouring of the water in its confined channel, may be brought to the same depth as the Hoogley at one end, and the creek at the other, or between 15 and 20 feet at low water mark. This can never be the case in the channel in the open lake, in which the current being unconfined, will spend much of its force, and if a rapid current is not to be obtained, the silting process may be greater than before, because the water by which the lake and the Entally canal are now filled is exclusively tidal and clear, whereas the waters of the Hoogley bringing down the upland collections of a thousand miles, and passing during the latter part of its course through the rich

loose soil of Bengal, contains a greater portion of deposit matter than the Humber or any of the rivers flowing into the great estuary between the counties of Lincoln and Norfolk.

11. It is necessary to notice Tolly's nullah which is now the only communication from the Hoogley and Calcutta with the Sunderbunds, and all the districts to the eastward bordering on the Ganges and Burumpooter. The crowded state of this canal, even to excess at all times, proves the want of additional accommodation to the general commercial intercourse by inland navigation. By a reference to Captain Prinsep's memorandum and diagram marked No. 6* the great imperfection of this channel will be at once seen. At each extremity of its course in the deep creek to the east and the Hoogley to the west, there is great depth of water, which would probably be preserved throughout the nullah itself, if its course was less tortuous, if the waters were properly confined by banks, if the dimensions throughout were of equal width, and if bridges having an insufficient water way, did not by interrupting the rapidity of the current, create a formation of sand banks. The free ingress of the high and strong-freshes from the Hoogley, in the rains, produces no inconvenience at the mouth of the nullah, or to the surrounding country by inundation.

12. The drainage of Calcutta has always been an imperfect operation, but the proposed continuation of the circular canal will not affect this in any way. The question does not belong to this paper, and I will only generally say, that I think it susceptible of very great improvement.

13. The drainage of the Salt-water Lake is obviously so easy a measure with the fall into the canal at low water that nothing need be said of it.

14. Warping is a process entirely unknown in India, and I conceive it would be very important that an opinion of some Engineer of eminence in England, conversant with the practice as observed in Yorkshire and Lincolnshire should be obtained upon this part of the subject. Captain Prinsep in the Paper† marked (No. 7,) has given a very ingenious plan for the gradual silting up of the lake. I feel however confident that a much better mode of effecting this object may be pursued. In my judgment, the lake should be *first* drained. When the water has been completely let off, it will be seen whether it is necessary to warp it up or not. It is essential in order to render this improvement conducive to one main end of its execution, the general health of Calcutta that there should be no stagnant water whatever. The next point to examine is whether the soil will be sufficiently good not to require the amelioration which warping would produce. It would also be necessary before the warping took place, that all the marine jungle should be entirely rooted out. If the expence of making the banks and sluices, &c. incident to warping‡ could be saved, the profit of the undertaking would be proportionately great.

† In order to warp up the Salt-water Lake to a level with the surface of the surrounding country it will be necessary that the water introduced from the Hoogley on the canal should stand two or more feet above the present surface of the lake. To effect this a bank of this height must be made round the Lake. In fact one bank of the new canal will perform this service, and round the remainder there must at any rate be made a catch water drain to receive the drainage water now discharging itself into the lakes, and the earth from this drain will, without much additional cost, surround the whole circumference of the lake

* No. 25.

T. Smith, Esq.

to

W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee, 8th Dec. 1837.

* Vide page 243.

† Vide page 251.

No. 25.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec. 1837.

15. I now come to the Financial part of the plan.

16. Captain Prinsep states the cost of the new circular canal to be about ten thousand Rupees or £1,000 per mile. The distance to be cut is 8 miles or 80,000 Rupees, £8,000. No locks are necessary, as the country is a dead flat. Some drains through the banks might be necessary, but if these were estimated at 20,000 Rupees, or £2,000, the expense would probably be more than covered.

17. The lake, according to Captain Prinsep's estimate, contains $18\frac{1}{2}$ square miles, equal to 12,000 acres or 36,000 Bengal Beegahs. The lowest rent of these lands near Calcutta is two rupees per Beegah. I take the lowest amount of rent, as well as produce of the lowest value. Such land might reasonably be expected to grow Indigo, Cotton, or Sugar. The yearly produce at two rupees per Beegah would be 72,000 or £7,200 or very nearly equal to the whole cost of the cut. Mr. Dampier, the Commissioner of the Sunderbunds, in whose jurisdiction the Salt-water Lake is situated, estimates the quantity of Beegahs at 60,000 and the rent at more than two rupees. But it will be safer to take Captain Prinsep's estimate.

18. I think that the general salubrity of this great city, and the vast improvement to navigation by a good canal instead of a shallow channel through the open lake are objects of such superior importance that I put all gain and profit out of the question. But it would be satisfactory at any rate, even without any prospect of collateral advantage, that so much good could be attained at so little cost.

19. It is necessary to remark that the Salt-water Lake has been disposed of in perpetuity, paying a rent of about 4,000 Rupees to Government. The profit to the Zemindars, as I learn from the Commissioner, from the fisheries, from reeds and from lands from which the waters have receded, amounts to about 16,000 Rupees. I learn from the same source, that the proprietors would not be unwilling to sell their property. There is a doubt whether the land as well as the water and the right of fishery belongs to the Zemindar or to the Sirkar,—the right is about to be tried.

20. I would beg leave to propose that this Minute, with its accompanying documents, may be submitted to the Honorable Court, with my humble request that the plan may be laid before Messrs. Telford and John and George Rennie for their opinion upon its practicability, and for such suggestions and directions as they are so well enabled to give for its execution. I propose these gentlemen, because having been the engineers in the works to which I have been a party, they will better understand my meaning.

21. I would further propose if the court should feel doubtful of the practicability, or if satisfied upon that head, should be unwilling to undertake it, that they will permit individuals, including their servants, to embark their money in the work.

22. It would be fair I think, that one half of the expense of the new proposed cut should be borne by the Company in return for the improved navigation and the greater increase of Tolls that accrue therefrom. The proprietors of the Salt-water Lake would of course continue to pay the same Jumma to Government as heretofore.

No. 25. A.

Queries put by Lord William C. Bentinck, Governor General, to Captain T. Prinsep, Hon'ble Company's Engineers and his Answers thereto.

HIS LORDSHIP'S QUERIES.

1. Ordinary high water mark at Chandpaul Ghaut?
2. Ditto at spring tides?
3. Ordinary low water mark?
4. Ditto at spring tides?
5. Same four questions during the rains?

REPLIES.

The quantity of daily rise and fall of the tides in the River Hoogly, differs very considerably during the neaps and springs with a gradual and daily increase from the depth of the neaps to the height of the springs; I have therefore thought it more concise to exhibit in a diagram annexed the extremes of each state of tide as observed in March and April for the dry season—August and September for the rains. In this diagram the base of the system of levels is taken from the average surface of those parts of the lake least subject to change.

The River Hoogly is found at its lowest mean level in January and February. It ebbs to its lowest extreme in March. In February the mean level of the river appears to agree with the mean level of the lake tides, as observed in the Entally Canal; the extreme variation of the former being 9 and 10 feet, while the extreme variation of the latter does not exceed 3 feet 2 inches. During the highest state of the two waters in August, September, the mean level of the Salt Lake is 4 feet below the mean level of the river. The extreme variation of the river being 13 to 14 feet, while that of the Salt Lake is only 18 inches. At this time of the year, the difference between the extreme high water mark in the river, and that of the Salt Lake is 11 feet. And the low water mark of the same tide will remain nearly the same in the river and Salt Lake.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee, 8th Dec. 1837.

6. Difference of high and low water mark in the Salt-water Lake and Chandpaul Ghaut?

This difference is found to vary as well at every period of each lunation, as at every period of the year. During the months of the greatest tranquillity, in January and February, the high water mark of the lake tides will vary between 5 feet and 1 foot 6 inches below

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec, 1937.

7. Difference in point of time between high water at Chaudpaul Ghat and the western extremity of the Entally Canal and Salt-water Lake?

the high water mark of the river from the springs to neaps.

The low water mark of the lake tides at the same time varying from 2 feet 2 inches to 4 feet 6 inches above the low water mark of the river from neap to springs.

During March and April, when the tides are at their maximum fury, the Salt Lake high water mark is frequently 8 feet below that of the Hoogly. The low water mark 6 feet above the low water mark of the Hoogly.

In the rains the high water mark of the lake tides remains at from 5 feet to 11 feet below the high water mark of the river.

The low water mark of the lake tides being sometimes 2 feet below, at other times 1 foot above the low water mark of the river.

The periods of high and low water in the Bidyadhuree River from which the waters of the lake are supplied, are rather before than after the same periods in the Hoogly.

From the peculiar nature of the lake however, over which the tide spreads itself on its approach, and from which it receives an almost inexhaustible supply during its retreat, their periods are subject to great modification.

When the waters of the Lake are high, the daily variation of surface is small (6 to 10 inches) and the period of high water in the Entally canal approximates nearly to that of the Hoogly.

When again the Lake waters are low the daily variation increases to 2½ feet extreme, the tide is sluggish, and the period of high water in the Canal is found later than that of the Hoogly by upwards of 2 hours, and a person starting from the mouth of the Bidyadhuree river with the flood may on his arrival, nine hours after starting, find the flood tide not yet expended, the distance being 28 miles.

The same causes influence the maximum and minimum influence of spring and neap

tides upon the Lake levels which are found to take place four days after each change, while in the river, generally, they take place the third and fourth tide.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee, 8th Dec. 1837.

8. Depth of water in the Entally Canal, and Salt-water Lake, at low water?

At the extreme low water of March, there is from 4 to 5 feet of water in the Canal near the Koolga bridge. At the parts where the Dredging machinery is at work 2 feet to 2½ feet.

The parts of the Salt Lake immediately in contact with the navigable channel through it, (which is also its drain,) are left dry at low water neap tides in the dry season. The parts more remote are never completely drained of water, and are scarce subject to a daily variation. I have made an estimate of the bed of this part of the lake in the Diagram attached, which I believe correct as an average.

9. Depth of water in the entrance of the Channel into which the Salt Lake waters pass to seaward?

The waters of the Lake do not pass immediately from the Lake as a basin into a discharge Canal, but gradually, and by myriads of little channels empty themselves into a channel of five miles in length, which runs in a diagonal direction through the middle of its surface. In consequence, it is found that the rapidity and dimensions of this Channel, which is likewise that used for navigation, increase in a settled ratio from almost perfect stagnation and dimensions given to it artificially at the Western extremity of the Lake to what is much more than sufficient for every purpose of navigation at the Eastern end. At Bahminghutta the breadth is 150 to 200 feet, and depth at low water 15 to 20 feet, the current always rapid.

10. Original depth and width of Tolly's Nulla?

The dimensions of the two natural creeks which were united by an artificial cut excavated by Major Tolly are not known. The cut was probably 60 or 70 feet wide—the depth scarce lower than it is found at present, or level with what might have then appeared to be the low water mark in the Salt creek running Eastward.

11. Present depth and width?

At present the bed of this Nulla is in the highest parts, upwards of 2 feet above the extreme low water mark of the river Hoogly,

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec. 1837.

12. What is the average silting up of Tolly's Nulla per annum?

and in the neap flood tides of the dry season, there is found only 4 feet water for a length of 3 or 4 miles near Rasypugla, while in the ebbs, the same portion of the canal is left with only a few inches of water.

This is unknown from the original depth of the Nulla being required. There has probably been some near Rasypugla, while other parts of the Nulla have increased in section. The failure in my time of this part of the Nulla may however be accounted for otherwise.

Do. of the Entally Canal and Salt Lake?

This Canal receives the rubbish and washings of the streets of the Town from the drains of the Circular Road, besides which its current is all but stagnant at all times. It has been deepened twice since its original excavation in 1810—and I estimate the annual sediment along its bed at from 3 to 4 inches, I have no data to ascertain the sediment in the Lake itself. It is partial, and chiefly confined to the immediate neighbourhood of the channel through it.

13. Is the silting up of each general or confined to particular spots, and if the latter, the reasons why?

In Tolly's Nulla if the failure of the part near Rasypugla has proceeded from such cause; the reason may be that the confined section of the Canal at this part, the narrowest throughout its course, offers a check to the colored waters introduced from the river in the rains, and causes the tide to deposit the great quantity of sandy particles which it holds in suspension. In the Entally Canal the sediment must be general, but of course is greatest at the Western extremity, into which the drains immediately conduct.

14. How many acres are comprised in the Salt Lake, and unculturable marshes?

The Western Lake, the largest, contains about 18 square miles equal to nearly 12,000 acres of land. The Eastern Lake may be taken at about 5,000.

15. Is the Salt Lake the property of Government, or individuals?

The right is I believe without question in favor of Government—but at present certain Zemeendars claim and enjoy the rights of fishing upon the Lake and think themselves at liberty to make encroachments upon its extent.

16. Has the mouth of the Tolly's Nulla on the side of the river been much cut away and widened by the rapidity of the descending current and by the flood tide?

I believe not at all. The contractions at the two old Bridges of Kidderpoor and Allipoor have so effectually checked the expenditure of water either way—but their contractions have by their eddies formed on each side of the bridge a kind of circular basin.

T. Smith, Esq.
to
W. C. Hurry, Esq.,
Secretary to Municipal Enquiry Committee,
5th Dec. 1837.

17. What is the level of the plain general as compared with low water mark in the river during the rains?

The general plain of the lower Delta in the same parallel as Calcutta, is found to rise gradually towards the banks of the Hoogly, as also of every other fresh water outlet which crosses it. The banks themselves being defended even against the highest flood. In the interior of the Delta, where the backwater creeks alone intersect the country, and there is no trace of any former large outlet of the Ganges,—the rice plains will be found nearly upon a level with the low water mark of the Hoogly in the rains, and generally subject to an inundation of a few inches from the flood tides of the backwater creeks during the spring tides of all seasons, if they were not embanked.

18. What is supposed to be the lowest level of any part of the Town of Calcutta?

The lowest part of Calcutta is the Mutchoo Bazar, nearly five feet below the extreme high water mark of the River. The Cantonment of Dum-Dum is about the same level.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee, 8th Dec. 1837.

No. 25 B.

LEVELS.

The lowest part of Calcutta corresponds with the 18 feet mark on the Tide Map of the Hoogly.

On the 9th, 10th and 12th of July, .. Four double tides days and nights were higher than 18 feet.

22d, 23d to the 29th inclusive,..	Eight double tides were,	ditto.
Aug. 5th to the 12th inclusive,..	Eight ditto	ditto.
„ 19th to 27th „	„ Nine ditto	ditto.
Sept. 3d to 10th „	„ Eight ditto	ditto.
„ 18th to 26th „	„ Nine ditto	ditto.

Total 40 double tides higher than the lowest part of Calcutta.

In July they would be two hours each tide and in August and September, three to four hours at the utmost above the lowest part of Calcutta.

The ebb during these high tides is about 9 feet which is a fall every low water to about 6 feet below the lowest part of Calcutta.

During the year 1823 there was an inundation of the Damoodah, on which occasion the tide did not ebb below the lowest part of Calcutta for nearly three complete days and nights.

Land Seeds

August Seed. Stone house near Mant

Ground near Government House

Stone at Grandstand Ground

Lower part of Culcutta Fort where house

The vic house north of the lake have a surface of 100 ft
gradually towards the lake from about the mark 1 ft to 1 ft
The floor of the house is 100 ft from the lake }
Consider how stone is used in the 5, 1, 8 2 1 }

House at south end of the wall Gate

Side Seeds

13. 2. North side of the bridge - August, September

8. 3. Stone house of March April May
7. 4. Stone house in the bridge in August

2. - Highest level of Canal side. August, Sept
May 1st 1st in the bridge. March

2. 3. Same as above in the water in the lake & Canal
2. 9. Same as above in the water in the lake & Canal

3. 4. Same as above in the bridge. March

7. 5. Same as above in the bridge. March

No. 25 C.

T. Smith, Esq.
to
W. C. Hurrey, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec. 1887.

Captain Prinsep's Memorandum and Diagram on Tolly's Nulla.

The narrowest part of this Nulla about midway between Tollygunge and Gurryahaut has a width of between fifty and sixty feet at high water and is left dry at the low ebbs of the dry season.

The levels in the accompanying Diagram have been assigned from continued observations upon the daily tides and annual variation at the respective places. Those of Gurrya have been connected with the instrumental levels of Captain Taylor as nearly as they could be—but Captain T.'s levels of 1823 fix the annual variation at Gurrya at 8 feet 5 inches, so that the removal of the several wooden bridges had as early as 1826-27, caused an increase of 10 inches in the annual variation at that place. During 1827-28 the annual variation was still 9 feet 3 inches.

The line drawn for the bed of the Nulla has been taken from the known floors under the several bridges. There is in general a greater depth of water in the space between the bridges forming a kind of pool in which boats remain afloat during ebb tides. The best harbour of this kind is between Allypore bridge and Tollygunge.

During the spring tides of July to October there is no reflux from the Soonderbuns at Gurrya, from the influence of the freshes in the river Hoogly. During the dry season the tides of the Hoogly generally meet those of the Soonderbuns in some place between Tollygunge and Gurrya, the ebb towards the Soonderbuns being still superior in force to the ebb towards the river.

No. 25 D.

Captain Prinsep's Memorandum on the Salt Water Lake.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec, 1837.

The position of an European City of such importance as Calcutta upon the very borders of an extent of salt marsh of which the insalubrity is so generally acknowledged, has often awakened the surprise of intelligent strangers; nor is it easy to adduce reasons why the recovery to cultivation of so large a tract has not before the present moment become an object of consideration to an enlightened Government resident on the spot.

The inhabitants of the Factory of Calcutta might with some reason have looked for security in the proximity of an immense impenetrable morass upon their flank, and as a defence against cavalry marauders would endeavour with jealous care to preserve it in the state it was. But the residents in the capital of an empire which has no enemy in the field within 1500 miles must view it in a different light. Health and appearance have long taken the place of security and defence as objects to be kept in view in the local improvements of the city and its vicinity, and there is only one way of accounting for the subject having escaped attention which offers any probability of truth. It would seem that the idea of the lake being necessary to the military defence of the city has been succeeded by an impression, not altogether unfounded and which appears yet to be rather generally entertained, viz. that the existence of this salt marsh in its present state is indispensable to the perfect drainage of the city.

Upon this point then it is necessary to be most particularly informed before any measures are proposed, that would interfere in any way with the present system, whether that system be effectual or otherwise. I shall offer my observations upon this point in the first instance, and hope to place the subject in such a light that its reference to any scheme connected with the city will be at once comprehended.

The River Hoogly, the western boundary of the Delta of the Ganges as well through its connection with the great river as from the streams flowing into it from the west, is subject to annual permanent freshes commencing in June and terminating in October. In the centre expanse of the Delta there are likewise several streams, having connection with the Ganges, which are subject to the same influence, rising at the season named according to the quantity of influx of fresh water from the Ganges.

The surface of the Delta intervening between these is divided into a perfect labyrinth by tide back-water creeks, which are subject to no other change of level during this season, than what is derived from the vicinity of the great discharge of water from the *embouchures* of the great river, and the effect of this discharge upon the tides in the upper part of the Bay of Bengal, added to the trifling discharge of rain water upon the surface of the country immediately in contact with the creeks.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec. 1837.

Calcutta is situated on the Hoogly below the parallel of latitude to which these tide back-waters are found to run—for in the general slope of the surface of the Delta from its upper fork at Jellingee to the sea, there is of course a limit beyond which the tide influence could not extend. And this city, built along the coast of the high banks of the river, which are generally above the elevation of its highest known flood, has immediately behind it an expanse over which the tides of their backwaters spread, thus dissipating part of their force and elevation.

I may mention here that it is a general principle of these creeks, that they either possess at their upper termination a jheel of this nature, over which they spread and dissipate their force, or else when they are connected with a continued channel, receiving some little water from the great river, the tide in its run up a long continuous channel gradually spends itself by the length of its course and friction of the bed.

It is a question of some difficulty in hydraulics to determine the level of the surface of the highest and also mean-tide level of these jheels, or what may be called the point of dissipation of the creek tides relatively with the summit level of the tides of the Bay from which they are fed, and when I hazard the assertion that the point is below the summit level of the parent tide even at the distance of 70 miles from the sea, which I believe is the case universally, I naturally do so with some caution as the subject has not been considered by any mathematical writer upon the subject of tides.

It is not my purpose to enter more particularly into the reasons that have led me to such a conclusion in this place.

The jheels above mentioned and the salt lakes in the present case from their depression below the general surface of the country naturally become the receptacles of all its superfluous water; and where the supply is considerable, the general level of the jheel as also of the creeks which run up into it is influenced in proportion during the season of such supply. In no case however does there exist a rise from such cause at all in proportion to the influence in parallel latitudes of the permanent freshes of the great river when admitted into a branch like the Hoogly. The effect of such supply creates a general slope of the surface of the lake or jheel proportionate to the expenditure required, and in the creek, which is the outlet of the salt lake; for this expenditure, the summit level is found very little (not 1 foot) above its extreme summit level in the dry months, when only the tide enters it: and the discharge is then effected by an inequality in the duration of the flood and ebb in the same way that the fresh water of a river is carried off. The supply of fresh water which now enters the salt water lakes is found to raise its mean surface towards the centre or opposite Balyaghat 2 feet.

This level is however, which would not be at first supposed, still below the summit level of the tides of the sea.

I have made the above remarks to explain particularly the nature of these back-water creeks because in case of the removal of the lakes by their being filled up or

embanked against the tide, and when a canal connected with these creeks is brought in circuit round one-half of the city to be drained, it is essential to know what will be the state of the tides under these new circumstances. Indeed the whole question of the expediency of recovering the lake for agriculture, as well as the means to be adopted for the purpose, will turn much upon this point.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec. 1837.

The first case to consider is by the removal of the lakes and substitution of a closed canal as above described to Chitpore, what would be the effect upon the present tide levels at Tarda below the confluence of the lake outlets and Tolly's Nulla. Also to assign the position of the summit level of the present Tarda tide upon our general tide gauge.

Upon the general principle that the extreme level in a creek nearer the parent tide must be above the highest surface in the lake of dissipation when there is no foreign supply of wheel or rain water and no supply into this lake but direct from the sea by this creek; I have supposed, that the present extreme tide at Tarda in the dry season, April and May, is nearly the mark XI, while the highest level near Balyaghaut is a ①, and that the extreme levels at Tarda and in the centre of the lake during the rains nearly correspond at $\times 2$. Upon like reasoning it may be shewn that by withdrawing the influence of the lakes the extreme level at Tarda will be raised a little, but as the tide will have a lengthened canal in which to dissipate part of its force, while all influence of the river is withheld, the extreme tide can never exceed what it is at Tarda at present or $\times 1$ in the dry months, except the dimensions of the canal are much enlarged. Its highest level in the rains depending upon the method of draining the town, of leading off the waters of the country into this outlet, as also upon whether any additional quantity of water is to be thrown in for filling the lake, and where its discharge is to be allowed.

The floors of the present Circular road drains at the respective places.

Head of	Dhurruntullah,.....	± 2	1'
„	Bow-bazar,.....	$+ 5$	1
„	Mutchooa-bazar,.....	$+ 2$	4
„	Manicktullah Road, ..	$+ 3$	3
Marhatta Ditch „	Saum-bazar Road, + ...	$+ 2$	10

will allow of the drainage remaining without alteration of these floors as long as the water in the canal does not reach above $\times 3$ during the season of rain. It is therefore clear that the lake withdrawn or embanked cannot remove any facility of draining the town when the circular canal brings the Sunderbund tide in circuit so immediate to its drain outlets. It remains now to provide against any possibility of their remaining above this level $+ 3$ during the rains.

The lake remaining as it is, and no water being admitted from the River the highest level in the Canal except from the small influence of drain water from the Town will not exceed $+ 2$,* and scarce reach that mark, and this influence I

* A fall of 1 inch upon 5 square miles of the town will give 1,161,600 cubic feet of water. The canal discharge per hour when sloping 6 inches per mile will be 4,376,664 cubic feet. It would never be necessary to draw off an inch of water in less than 3 hours. The slope of the canal being raised to 9 inches per mile the expenditure will be 6,572,736 cubic feet per hour.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee, 8th Dec. 1837.

consider will never even in flowing tides raise the Chitpore-end more than $1\frac{1}{2}$ foot under any circumstance.

It must now be considered that the drains with the exception of the Dhurum-tollah,* under the new circumstances of being so much nearer their outlet, will have great advantage, and as the lowest spot in Calcutta is much above† the highest of these drains there will be rather an advantage than otherwise, in now and then allowing the tide to enter their mouths.

I may therefore safely assume that any scheme may be adopted, which will not raise the waters above $+ 3$ during the rains, and that under the contemplated circumstances an additional level of a foot may thus be allowed to the surface of the Lake,‡ without danger to the drainage.

The Salt-water Lake adjoining Calcutta, covers a surface of $18\frac{1}{2}$ square miles of land. From its lowness in level it is at present the receptacle during the rains of a considerable surface of country water besides the more immediate drainage of the city of Calcutta. The principal influx of water is from the north and west, and in the rains when this is at a maximum there is an evident general slope of the surface of the lake proportionate to this expenditure which has been detected by the several series of levels which have been carried on at different periods.

The surface of this lake as may be seen in the survey lately prepared is naturally divided into three compartments. Two north of the present navigable§ channel and lake outlet, and third south of that channel, of the two first the western, containing $5\frac{1}{2}$ square miles, at present receives the greatest influx of extraneous water from the north towards Dum-Dum and west from Calcutta, but neither yields so great a depth of water, nor presents to the eye so great an expanse free from vegetation, as the neighbouring compartment of 7 square miles, which is separated from it by a natural rise in the bed upon which vegetation has taken root, although the surface is almost at every tide under water.

The surface of the upper end of the first named compartment, towards the Saum-bazar bridge, is said by Major Schuch to have an elevation of 2 feet above what I have ascertained to be the extreme level near Balyaghaut, which would give a slope of 7 inches per mile to the surface: now as I know this elevation to be very partial and owing to a certain admission of tide by the Saum-bazar ditches,|| I must

* This drain's exit has so violent a slope at its mouth as to do harm at present and an elevation of $1\frac{1}{2}$ of water would be advantageous to it.

† Lowest part of Calcutta at the mark $+ 8. 2$.

‡ For the purpose of raising its bed with sediment.

§ Western .. $5\frac{1}{2}$ square miles.

Eastern .. 7 " "

Southern .. 6 " "

 $18\frac{1}{2}$ square miles.

|| Major S. took his level under the Saum Bazar Bridge, making no allowance for the run of one mile thence to the Lake or the resistance of the several Bunds through which it passes into the Lake.

T. Smith, Esq.
by
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec. 1837.

reject such a slope as at variance with every other observation I possess relative to its slope, and particularly the velocity of its water which certainly never attains to any thing near what would obtain with such fall*, and I believe I shall be within the mark in assigning a slope of 3 inches per mile extreme to the surface of this compartment during the rains generally from the Saum-bazar enclosures to the Balyaghaut chowkies. The expenditure in this case becomes 11,612,080 cubic feet per hour, with a rate of $739\frac{1}{2}$ † feet per hour. This is even much beyond what I can believe to be true. The discharge of water from all the compartments of the lake takes place rather by spilling over the banks of the outlet channel, (which have been raised to a level sufficient to be laid bare in the low tide of the dry season by the silt left on them by the continued flux and reflux of tide) rather than through any more defined side outlet, and it therefore becomes difficult to ascertain the exact quantity of general expenditure‡ from the lake in any state except by an estimate from the dimensions and rate of this outlet, which is subject to a reflux in all cases.

That the lakes if left to themselves would in the course of time fill up of their own accord I have little doubt, and that such process is now in activity is confirmed by the rapid increase of vegetation upon its surface within my own knowledge. I cannot however learn that much ground has been gained to cultivation during the last forty years and although the amount of yearly filling up must at the present time be much greater than it was forty years since, another period of this length will probably, unless other means are provided to increase the yearly sediment, witness a very sorry progress towards their final recovery,—unfortunately during the present state of things the influx of jheel water although some of it is originally derived from the coloured water of the river Hoogly brings little or no sediment, and as the water is quite clear before it reaches the channel of outlet its discharge checks at this time any silt from the daily tide and also washes away much that may have found during the dry months.

The two principles therefore upon which I would rely for a more effectual recovery of the lake, and of this compartment in the first instance, are, to prevent the influx of any water that does not proceed directly from the Hoogly or from a source whence sediment is certain, as from the drain outlets, and to encourage the growth of vegetation along the banks of the channel until by this means in the course of a very short time it will be easy to form a slight embankment at small cost and over which the water may occasionally spill.

The quantity of river water to be admitted§ must then be regulated by the height of the water in the lake which may always be lowered by a slight check to the feeder by which means the discharge will gain upon the supply. It is my

* Section being 15,840 square feet or $5,280 \times 1\frac{1}{2} \times 2 = 15840$.

$\sqrt{2}$
= $\frac{1}{6015}$ } rate becomes 1213 feet per hour or about $\frac{1}{4}$ th of a mile.

† About $\frac{1}{4}$ th of a mile.

‡ Section at Baminghatta $120 \times 24 \times \frac{1}{2} = 1920$ square feet.

Miles per Hour

$1920 \times 5280 \times 2 = 20,375,200$ cubic feet.

So that when the lake is full the daily discharge cannot be less than 50,000,000 cubic feet.

§ And consequently dimensions of the feeder canal.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee, 5th Dec. 1837.

intention to propose that the water of this compartment of the lake be kept at an average additional elevation of less than 1 foot,* or what would perhaps be still more perfect that the supply be let in during the neaps and so restrained in the springs that the lake near Balyaghaut shall remain at a constant level of 6 to 9 inches above its present extreme height. I will now consider whether a feeder of 100 or 200 hs. ft. of section and excavated in a way that would secure them from accident or from endangering the vicinity would ensure a sufficient supply for the purpose and what quantity of sediment might be looked for during the year.

The surface of this division of $5\frac{1}{2}$ square miles at an average depth of 2 feet will give its contents of water 306,662,400 cubic feet. The contents of the adjoining division must be about double this quantity,—now a feeder canal of 100 feet section trapezoidal having the slope of 1 foot per mile will run at a velocity of $1\frac{2}{10}$ mile per hour and supply 6,34,600 cubic feet only in that time. Increase the fall of the surface of this feeder to 2 feet per mile and with the additional section gained from its trapezoidal shape the rate becomes $2\frac{1}{10}$ mile per hour and supply 2,191,614 cubic feet per hour. I shall not think it advisable to exceed this velocity. For the months July, August, September, I may safely reckon, from the known state of the tide (and with allowances for closing the feeder when the river is too high, &c.) upon a medium supply of $(900,000 \times 12 = 10,800,000$ cubic feet per day) would furnish a quantity equal to the present contents of this compartment in 30 days exclusive of water brought from the drains. And therefore I might reckon it possible to fill this compartment of the lake in the course of the rainy season with four times its present contents of turbid water direct from the Hoogly by means of a single feeder of the dimensions named.

The proportion of sediment in the water of the Hoogly is at present unknown. It is therefore impossible to say what would be the quantity produced from a depth of 8 feet water. Several inches may be expected,† but if this is not thought sufficient it is always possible to increase the supply or enlarging the feeder or furnishing a second, for it is quite evident that as the hourly supply of 2,000,000 cubic feet is so small compared with what I have estimated as the expenditure along this compartment of the lake, 11,612,080 cubic feet per hour and a daily supply of 10,800,000 cubic feet so small compared with the daily discharge by the Bahminghatta outlet, that the rise of the surface in consequence of so trifling a supply in addition will not be 6 inches.

It will be said that the method I have now proposed embraces only one-third of the whole lake, but it must be remembered that it is the one of most importance to the town and likely to yield the greatest return. The same feeders, when they have completed this portion, may be turned into the second compartment, and the self-same principle may be applied to the southern division if thought necessary by a feeder direct from the high parts of Tolly's Nullah about Kaleeghaut.

The river Hoogly it must be remembered is the only source from which turbid water can be drawn, and this only during the four rainy months, 15th June

* And which would injure no property in the vicinity.

† Only 2 feet average is required.

to 15th October. The quantity of sediment in the Hoogly water will bear no proportion with that in the Ganges, and the tide waters of the Soondurbuns are notoriously clear during the rains, as also during the dry season, except in the spring tides when they have inundated the land.

T. Smith, Esq.
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee, 8th Dec. 1837.

I have already mentioned that during the rains there is a general slope of the surface of the lake from the north towards the present outlet. To make this outlet the feeder it will be necessary to invert the present slope or raise the level near Balyaghaut above what it is at present near Saum-bazar, which must unavoidably interfere with the present drains. Besides that by this means as the present channel must be at once its supply and place of discharge, the supply according to every sound principle cannot be so constant and unremitted as if the supply were separate and at the upper end, and no hope can be formed that the bed will be raised rapidly by any means but a constant introduction during the rains of river water.

I have purposely connected the present scheme with the system of canals now carrying on, but upon mature consideration, I can see no good reason why any alteration in those canals should be necessary for this additional object. The discharge canal must necessarily be the best adapted for navigable purposes from its depth* and also from its lower level most fit to receive all drain water.

If it is said that no real efficacious method can be adopted until the whole lake is embanked, I need only advert to the very trifling additional rise of the surface of the lake-waters necessary in the present scheme, and to mention that the adoption of such a plan will in the course of a very short time give the means of embanking at a very trifling expense where now such measure would be attended with very great charge and difficulty.

If the Circular canal is made the feeder of turbid water to raise the bed of the lake it must unavoidably be subject to all the disadvantages I have pointed out in a former paper upon that canal, besides that other means must be provided to carry off the drainage of the town. This last point alone in expense would deter the Government I apprehend from such measure; for as the low level fit for receiving the drain water will be in this case either the lake itself or the series of nullahs eastward of the lake, tunnels under the canal must be excavated or a second canal of sufficient dimensions must follow the line of the Circular canal and be continued perhaps to the very eastern boundary of the lake.

By the present scheme during the dry months when the feeders no longer serve the tide will be allowed as before to spread upon the lake, for I would by no means offer any check to the spreading. In this also will the action of silting up be accelerated by the Circular canal into which a higher† tide will flow from the river and not be allowed to return.

I therefore enclose a schedule of the method I would adopt for raising the bed of the lake and feel some degree of confidence that the principle of this scheme

* And the constant tendency rather to increase its dimension than to fill it up.

† And dirtier from its rapid passage through the canal.

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec. 1837.

or some modification in its detail will in the end be acknowledged to offer advantages and economy beyond every other design that could be proposed for the purpose.

No. 25 E.

Scheme for raising the bed of the Lake to a level fit for purposes of cultivation, with statement of expense.

First.—A closed drain must be excavated from the Saum-bazar bridge to Mohisghaut, 3 miles, to convey the present supply of Dum-Dum jheel water into the eastern division of the lake. Section average 90 square feet, costing about 1200 Rupees per running mile, 3600

Second.—One feeder canal to be excavated from Chitpore to the western lake. The floor at its river mouth excavated to 4.2 which will require 16 feet of digging. The floor at the lake and at Θ or perhaps 1.25 feet broad at bottom and trapezoidal, so that 6 feet of water gives section 200 square feet, average section of such an excavation being 530 square feet, will cost 7680 rupees per mile for a length of 3 miles, 23,040

Third.—Three bridges will be necessary over this canal for the several roads. To each bridge I would provide some contrivance for closing the canal estimating each at 15,000, 45,000

Fourth.—Sundry expences for preserving a channel as fast as the lake may fill at the place of discharge from the feeder canal, as also in embanking the side towards the discharge canal when sufficiently raised, also the western side and watch the place of discharge, 15,000

Supervision and Contingencies, 4,332

90,972

Fourth.—Add the compensation for the acknowledged rights of fishery and incomes now enjoyed upon the faith of the rights conferred by the perpetual settlement estimate at 1 lac of rupees for the whole lake, for the western compartment, 30,000

Total expense and outlay, .. 1,20,972

N. B. The above does not include any charge for purchase of ground for the feeder canal and provides only a single feeder. It will be possible I believe to find ground from that purchased for the circular canal, without any material sacrifice in the resale of ground from which a certain return is calculated upon to that work—as per contra to the above.

The contents of the western compartment of the lake, are 10,630 begas of land, the value of which nett when fit for cultivation may be taken at the least 30 rupees per bega, yielding 3,18,900

T. Smith, Esq.
to
W. C. Hurry, Esq.
Secretary to Municipal Enquiry Committee,
8th Dec. 1897.

• It would be easy to shew that the recovery of the second compartment in surface upwards of 12,000 begas would be still more profitable in return as it would be free from the great expense of excavation near Chitpore and bridging the canal with an additional outlay of 50,000, this second compartment would yield a return of 3 lacs, but as this part of the undertaking is remote I waive the introduction of it in the present scheme.

High part of Strand	20	
"	19	
"	18	
"	17	
Government House Road	16	
Champal Ghaut Stone	15	{ Highest known rise of the Hooghly—August, September, October.
	14	
	13	
	12	
	11	
	10	Ordinary flood during the rains.
	9	
Lowest part of Calcutta	8	Highest spring flood, in April, May.
"	7	
"	6	
Calcutta drain floors	5	
along the Circular Road	4	Lowest neap flood in September.
	3	{ Highest Lake tide at Balyaghaut, August, September—also highest ebb of Hoogly in August.
	2	
General level of rice cultivation in parallel of Calcutta	1	Lowest neap flood of Hoogly, March.
Vase	0	
		Ordinary flood tide Balyaghaut, Dec. to April.
Supposed average bed of Lake	{ 1 } { 2 }	
		Lowest neap tide ebb in Entallee Canal & Lake.
Lowest bed of Lake	3	
	4	
	5	
	6	Neap ebb tide of Hoogly, March and April.
	7	
	8	Lowest spring ebb of Hoogly, March, April.

